NOTE

Subject: EPA Comments on Alliant Energy, WI Power & Light Co -Nelson Dewey Generating Station, Cassville, WI
Round 10 Draft Assessment Report

To: File

Date: December 8, 2011

1. On p. 2, under "**Recurrent Operation & Maintenance Recommendations**" in item 2, remove "and" at end of statement and add it in at end of item 3 statement. Same comment for p. 11, section 3.3.

2. On p. 2, section 1.2.2, the table in this section includes facility ownership and contact information. The last line provides an emergency phone number of 911, not sue what the relevance of this would be.

3. Please insert the pertinent figures and photos into the text so the reader is not moving to and from the text and the appendices. Keep the remainder of figures and photos in the appendices.

4. On p. 7, Section 2.1.3, third line, replace "out" with "our."

5. On p. 9, section 2.6, first paragraph, rephrase the following statement: "The reported factors of safety are met generally acceptable criteria for dams."

6. On p. 10, first paragraph, fifth line, add "be" in between "would used."

7. Although there appears to be a discussion in section 1.2 of the description of each unit and the materials in which each unit consists, it is requested that in Appendix C, the checklist specifically address the following question: "Is any part of the impoundment built over wet ash, slag, or other unsuitable materials (like TVA)?" Please correct for each impoundment.

8. Please include the actual reports pertinent to the structural stability referenced in Appendix D.

RE: Comment Request on Coal Ash Site Assessment Round 10 Draft Report - Alliant Energy Stations

Fauble, Philip N - DNR to: Jana Englander, Jose Cisneros, Galloway, Meg M - DNR

Cc: "Lynch, Edward K - DNR", "Coakley, Ann M - DNR"

Jana,

Thank you for offering WDNR the opportunity to comment on the Draft Assessment Reports. We have reviewed the reports included here and offer some fairly brief comments. What follows are comments from one of our Regional field staff assigned to several of the facilities mentioned in the assessments:

The only comments I have in regards to the Nelson Dewey and Rock River reports are similar to those comments I previously made for the Columbia Generating Station:

The Executive Summaries of both reports generally state that all of the impoundments found at these two facilities (six in total) were constructed for "the purpose of storing and disposing non-recyclable coal combustion waste…"

I don't agree with that characterization. Even if the original intent for these structures was long-term storage and disposal of CCW, they have not been used for such a purpose in decades. To the best of my knowledge, none of the WPDES ponds were ever intended for use as anything other than settling and clarification of facility discharge water, not for storage of CCW (not even temporary storage) and certainly not for disposal of CCW. And while the slag ponds at each facility could be considered to be used for the temporary storage of CCW, neither has been used for the permanent disposal of CCW, as that material is/was removed from those structures on a regular basis and either beneficially re-used or landfilled at a licensed solid waste facility. I find it curious that there is absolutely no mention in either report that CCW sluiced to the respective slag ponds was/is permanently removed from said structures on a regular basis. If it had not been, these structures would have been filled to capacity many years ago.

I agree with these comments and would like to extend them also to the Alliant Edgewater Facility in Sheboygan, WI. We disagree that any of these ponds are, in fact, used for the disposal of coal combustion byproducts. The larger of the ponds are being used in accordance with their WPDES Permits for the treatment of cooling and contact water from the plants prior to surface water discharge. All coal fly ash in Wisconsin has been handled in dry form since the mid-1980's. The smaller (1-2 acre) ponds where bottom ash is sluiced are not considered disposal areas by the WDNR. They are classified as solid waste (all CCW's are considered solid wastes under WI law) storage/treatment facilities. The bottom ash is sluiced wet to these areas and dewatered prior to their excavation for beneficial use projects. The CCW beneficial reuse rate in Wisconsin is between 85-90 percent, so utilities have little

need for extensive disposal facilities. What CCW disposal facilities we do have permitted are all approved for dry disposal only.

These comments are similar to our previous comments regarding these and other ponds at coal-fired utility plants in Wisconsin. Again, we maintain that the State of Wisconsin does not have any active wet slurry CCW disposal sites, nor have any existed for decades.

Thank you again for considering our comments. If you have any questions, please feel free to contact me.

Philip Fauble, P.G.
Mining & Beneficial Reuse Program Coordinator
Bureau of Waste & Materials Management
Wisconsin Department of Natural Resources
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August 13, 2012

Via E-mail to: hoffman.stephen@epa.gov
and kohler.james@epa.gov

Mr. Stephen Hoffman
U.S. Environmental Protection Agency (5304P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Response to Draft Assessment Report
Nelson Dewey Generating Station

Dear Mr. Hoffman:

This letter is sent on behalf of Wisconsin Power and Light Company's ("WPL") Nelson Dewey Generating Station in response to the United States Environmental Protection Agency's ("EPA") Draft Report Round 10 Dam Assessment for the Nelson Dewey Generating Station, dated November 15, 2011 ("Draft Report"). The site assessment was conducted by EPA's contractor, GZA GeoEnvironmental, Inc. on June 7, 2011. EPA's cover email accompanying the Draft Report requests that comments be submitted within 30 days of receipt. EPA extended this date to August 13, 2012 for WPL. The email also provides for a business confidentiality claim covering all or part of the information submitted by WPL.

CONFIDENTIAL BUSINESS INFORMATION CLAIM

WPL is claiming business confidentiality for both the Draft and Final Reports associated with the site assessment of the coal combustion material management units at the Nelson Dewey Generating Station and for the comments submitted in this letter in their entirety, a claim which is being made in accordance with 40 C.F.R. Part 2, Subpart B.

Per the criteria established by 40 CFR. Part 2, Subpart B, §2.208, the documents for which confidential treatment is requested are entitled to confidential treatment because: (1) this claim is timely and has not been waived, (2) WPL has taken reasonable measures to protect the confidentiality of the information and intends to continue to take such measures, (3) the information is not reasonably obtainable

without WPL's consent by other persons by use of legitimate means, (4) no statute specifically requires disclosure of this information, and (5) the disclosure of the information is likely to cause substantial harm to WPL's competitive position.

All of the documents for which confidential treatment is requested help WPL maintain its competitive position. WPL protects the confidentiality of this information by making it available only to those within the company with a legitimate need to know the information for purposes of performing their jobs.

COMMENTS ON THE DRAFT ASSESSMENT REPORT

Listed below are the comments associated with the Draft Report for the WPL – Nelson Dewey Generating Station.

Italics indicate language in Draft Report. **Bold** indicates suggested language.

General Comment:

1. Remove all references to "*Alliant Energy*" and insert "**Wisconsin Power and Light Company ("WPL")**". This should include *"Alliant Energy"* references on Cover Page; Executive Summary (2 references in the first paragraph); Table of Contents; Page 1 (Section 1.1.1); Page 2 (Table as part of Section 1.2.2); Page 4 (1 reference in first paragraph); Page 5 (Section 1.3.2); Page 6 (Section 1.3.7); Appendix C (Inspection Checklist – Operator Name).

Executive Summary and Page 10 (Section 3.1 and 3.2):

1. Page ii and Page 10 – The Executive Summary and Section 3.0 contains a number of deficiencies and a recommendation for further studies and analyses. For the Slag Pond and WPDES Pond, the inspectors state *"incomplete stability analysis"* and a recommendation to *expand the stability analysis…."* for each pond. We believe these recommendations should be removed as the attached June 28, 2012 Aether Report addresses each of these. At a minimum, please state *"additional studies were performed by WPL and Aether dbs and EPA found this additional information satisfactory and the issue is resolved".*

Ratings of the Slag Pond and WPDES Ponds:

1. Both ash ponds were rated as *"Fair"* due to an *"incomplete stability analysis".* We believe these ratings should be changed to **"Satisfactory"** based on our comments and the attached June 28, 2012 Report from Aether dbs that contains additional geotechnical analysis of the ash ponds. The ratings of the ponds can be found in the following areas of the Draft Report: November 15, 2011 letter from GZA to EPA; Page ii under the Assessments Section; Page 7 (Section 2.1.1); Page 8 (section 2.1.6); and Page 10 (Section 3.1)

Executive Summary and Page 10 (Section 3.1 and 3.2):

1. Page i, Executive Summary, Paragraph 3 – This paragraph provides background information on the Nelson Dewey Slag and NPDES ponds. However, the discussion may incorrectly give the impression that all of the fly ash from the plant is discharged to the ponds. This is not the case since fly ash is collected dry in a silo for off-site beneficial uses. Only minor quantities of fly ash are discharged to the ponds during infrequent non-chemical equipment washing activities, in run off, etc. In addition, the boiler water wash does not include clarification that it is a "non-chemical" wash.

Section 1.2.2:

1. Page 2, Owner /Caretaker – In the table under this Section, remove *"Alliant Energy"* and insert either **"Wisconsin Power and Light Company"** or **"WPL"**. In addition, please remove *"Maria Lauck"* as the Plant Contact and insert **"James Wamsley"**. Mr. Wamsley's e-mail address is **jimwamsley@alliantenergy.com**.

Section 1.2.3

1. Page 2, Last Paragraph, Closed Fly Ash Pond – Since the closed ash pond is now a licensed closed landfill and the associated structure *"does not fall within our scope of work as the unit does not meet the criteria set forth by the U.S.EPA…"* Please remove the photos in Appendix F of the report.

Section 1.2.4

1. Page 3, Third Paragraph – This paragraph does not acknowledge the site is authorized to discharge the slag pond effluent through a State of Wisconsin issued WPDES Permit. After the sentence starting with *"Water and unsettled solids…"* and after *"..western corner of the pond"* please insert: **This discharge is regulated as Outfall 002 under WPDES Permit Number WI-0002381-06-0.**

Section 1.2.5

1. Page 4, Second Paragraph – This paragraph does not acknowledge the site is authorized to discharge the WPDES pond effluent to the Slag Pond through a State of Wisconsin issued WPDES Permit. After the sentence starting with *"As necessary, water is pumped…"* and after *"..northwestern portion of the impoundment"* please insert: **This discharge is regulated as Outfall 102 under WPDES Permit Number WI-0002381-06-0.**

Section 31

1. Page 10, Assessments and Recommendations for the WPDES Pond and Slag Pond– After the Round 8 Assessments by EPA at some of our other generating stations, Alliant Energy has prepared a "Corporate Operations and Maintenance Plan" that outlines the proper operations and maintenance of coal combustion ash ponds based on the guidance documents readily available from the Corp of Engineers; FEMA; and OSHA. In addition to the Corporate Plan, each generating station has a "Site Specific

Operations and Maintenance Plan" that defines the roles; responsibilities; and actions required by the generating station to ensure our ponds are maintained and operated in a safe manner now and in the future. As part of the Site Specific Operations and Maintenance Plan, a 3rd Party PE will inspect the site on an annual basis to evaluate the current conditions; evaluate maintenance activities; and provide additional guidance to improve the overall safety of the ponds. The inspection sheet has been revised accordingly to include monthly and a more detailed quarterly inspection. We anticipate having this plan, including training; operational at the Nelson Dewey Generating Station by December 31, 2012.

REQUEST FOR CONFERENCE CALL WITH GZA TO REVIEW COMMENTS

Finally, because of the technical complexity and factual detail contained in the Draft Report, WPL believes it would be efficient and helpful to conduct a conference call between WPL; Aether dbs; EPA and GZA to review the details of these comments. WPL would be happy to coordinate the time and set up a call-in number. WPL specifically requests such a discussion take place prior to the preparation of a Final Report .

WPL appreciates this opportunity to provide comments on the Draft Report for the Nelson Dewey Generating Station. If you have any technical questions, please contact William Skalitzky at (608) 458-3108. If you have any legal questions, please contact Jenna Wischmeyer at (319) 786-4843.

Very truly yours,

James Wamsley

James Wamsley
Plant Manager

Enclosure

cc: James Kohler - EPA
William Skalitzky - AECS
Jenna Wischmeyer- AECS
Maria Lauck – AECS
Terry Kouba - AECS

aether dbs

elemental design build solutions

June 28, 2012

154.017.002

Mr. William Skalitzky
Alliant Energy Corporate Services
4902 N. Biltmore Lane
Madison, WI 53718

Response
USEPA Draft Report
Safety of Coal Combustion Waste Ponds
Nelson Dewey Generating Station

Dear Mr. Skalitzky

Aether DBS provides a response to the Draft Report issued by United States Environmental Protection Agency (USEPA) commenting on the structural safety analysis of the two operable coal combustion waste ponds on the Nelson Dewey Generating Station property. The draft report was prepared by GZA GeoEnvironmental, Inc. (GZA) and is dated November 15, 2011.

Aether DBS concurs with the finding that the two ponds on the Nelson Dewey Generating Station are **low hazard potential**. The GZA report indicates that both the Slag Pond and the WPDES Pond impoundments are combination incised/diked impoundments. Aether concurs with this observation for the WPDES Pond. Aether understands that the Slag Pond was once part of a diked pond enclosure that included the adjacent closed ash landfill area. Today the operating Slag Pond has a very large dike crest width (minimum width of approximately 70-feet, Figure 1). Since the present Slag Pond is far from the outer slope of the original impoundments from the late 1950's, Aether analyzed the Slag Pond as an incised structure.

In the conclusion of the draft report GZA provides a United States Army Corps of Engineers (USACE) condition rating of **FAIR** to both ponds. In justification of the **FAIR** rating GZA cites the need for an analysis of both ponds with the water elevation in the ponds at the 100-year storm elevation with appropriate seepage conditions. The rating also is made with the suggestion that the soil parameters should be justified with appropriate in-situ or laboratory testing and that the

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impact of the clay layer near the bottom of the WPDES pond should be included in the analysis.

Response and Additional Information

In 2007, URS Corporation (as the Washington Group International) prepared a geotechnical report for Wisconsin Power and Light to support the proposed construction of a third unit at Nelson Dewey Station located south of the existing station. The investigation included the installation of 66 soil borings some going to the bedrock surface. Of these borings, Attachment A, five were installed on the dikes of the WPDES pond at the locations shown on Figure 1. In addition to the boring information, the URS report shows that ground water elevations under the site are lower than the pool elevation in the Mississippi River. Figures prepared by Warzyn Engineers in 1981 are also presented in the URS report and show that the observation of ground water elevation being lower than river pool elevation is consistent, Attachment B.

The URS boring BND-55 is close to the location of the Aether boring SB-1 and shows a similar clay layer at elevation 610 feet. Above the clay layer, the boring shows sand with some clay at the top of the embankment. Standard penetration test resistance values reported in BND-55 indicate a loose to medium dense sand and a very stiff clay layer on the top of the embankment. The clay at elevation 610 is stiff clay and is similar to the clay found in boring SB-1, SB-2 and SB-7 at the same elevation. The other BND borings show that the sand is generally loose to medium dense in the zone of interest to embankment stability (depth of 0-15 feet).

The additional soils information from 2007 supports a conclusion that the WPDES Pond was constructed by excavating into the native soils partially incising the pond and using the excavated soil to build the dikes. Figure 2 shows Figure 7 of NAVFAC DM-7.01, 1986, relating the relative density of cohesionless soils to their internal friction angle. For very loose to loose relative density ML and SM soils, the internal friction angle varies from 27 to 29 degrees. For coarser sand, as is found at the Slag Pond, a loose relative density equates to 28 to 31 degrees. The lower value of each range is used in the new analysis attached hereto (Attachments C, D & E).

For the clay layer Aether has included the clay layer that is found at the original ground surface. The layer is provided with cohesion typical of a stiff clay layer (1500 psf). The selected value is supported by the observations of Cabeno in 2011[1], as follows.

[1] Aether DBS letter report dated June 27, 2011 to Mr. William Skalitzky Re: Ash Pond Slope Stability and Hydraulic Analysis, Nelson Dewey Generating Station, Wisconsin Power and Light Company, Cassville, Wisconsin

Boring	Depth (feet)	Cohesion (pounds per square foot)
SB1	9.75 – 10.5	1500 & 2000
SB2	10.0 – 11.5	1750
SB7	12.0 -13.5	2000 and 2250

The failure surface search routine intersected the clay layer (Attachment C) but, the layer does not control the critical slope stability of the WPDES Pond. The layer would have to respond as a soft clay to have a potential impact to the stability of the embankment.

In addition to the adjustment of the soil strengths based on the URS 2007 borings, the Aether analysis[1] was also modified to show the static analysis of the WPDES Pond with water seeping vertically to the ground water surface approximately 10-feet below the normal highest operating water surface. For the Slag Pond, the static factor of safety was based on the potential failure of the inboard slope with the ground water elevation the same as the Slag Pond water elevation. For normal water levels, the WPDES Pond has a static slope stability factor of safety of 1.9, Attachment D, and the Slag Pond has a static factor of safety of 2.2, Attachment E.

For high water in the WPDES Pond (elevation 619.3 feet), the water surface at the toe of the embankment was assigned to the ground surface (elevation 614 feet) to maximize the seepage forces and cause the lowest factor of safety. Under this rapid loading condition combined with the new lower strength values the factor of safety is 1.4, Attachment D. Since this is similar to rapid drawdown the value is acceptable. For the Slag Pond, the high water condition is most analogous to rapid drawdown as the flow out of the pond to the Mississippi river would be rapid as the river stage lowers after a 100-year return flow. For rapid drawdown from the 100-year flood elevation to the bottom of the pond, the factor of safety is 1.8, Attachment E.

Finally, a new analysis of each pond with normal water elevation and the design earthquake as a pseudostatic load shows a factor of safety of 1.7 and 2.0 for the WPDES and Slag Ponds, respectively (Attachment D & E).

Summary

Additional data is provided on the in-situ strength of soil in the WPDES Pond dike and on normal ground water elevation beneath the site. These results are used to choose strength parameters that reflect minimum internal friction angles for the soils in the embankments at loose relative density as indicated by the soil borings or the methods of deposition/installation. With these conditions, the static factor of safety under normal operating conditions is greater than 1.5, the pseudostatic earthquake analysis factor of safety exceeds 1.0 and the effects of the 100-year flood from rapid drawdown and/or increased toe seepage is above 1.3.

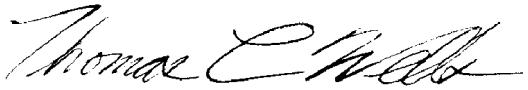
Based on the supplemental analysis and information, Aether DBS believes the condition assessment for the WPDES and Slag Ponds may be rated **SATISFACTORY.**

The qualifications of the authors in geotechnical engineering are offered by curriculum vita, Attachment F.

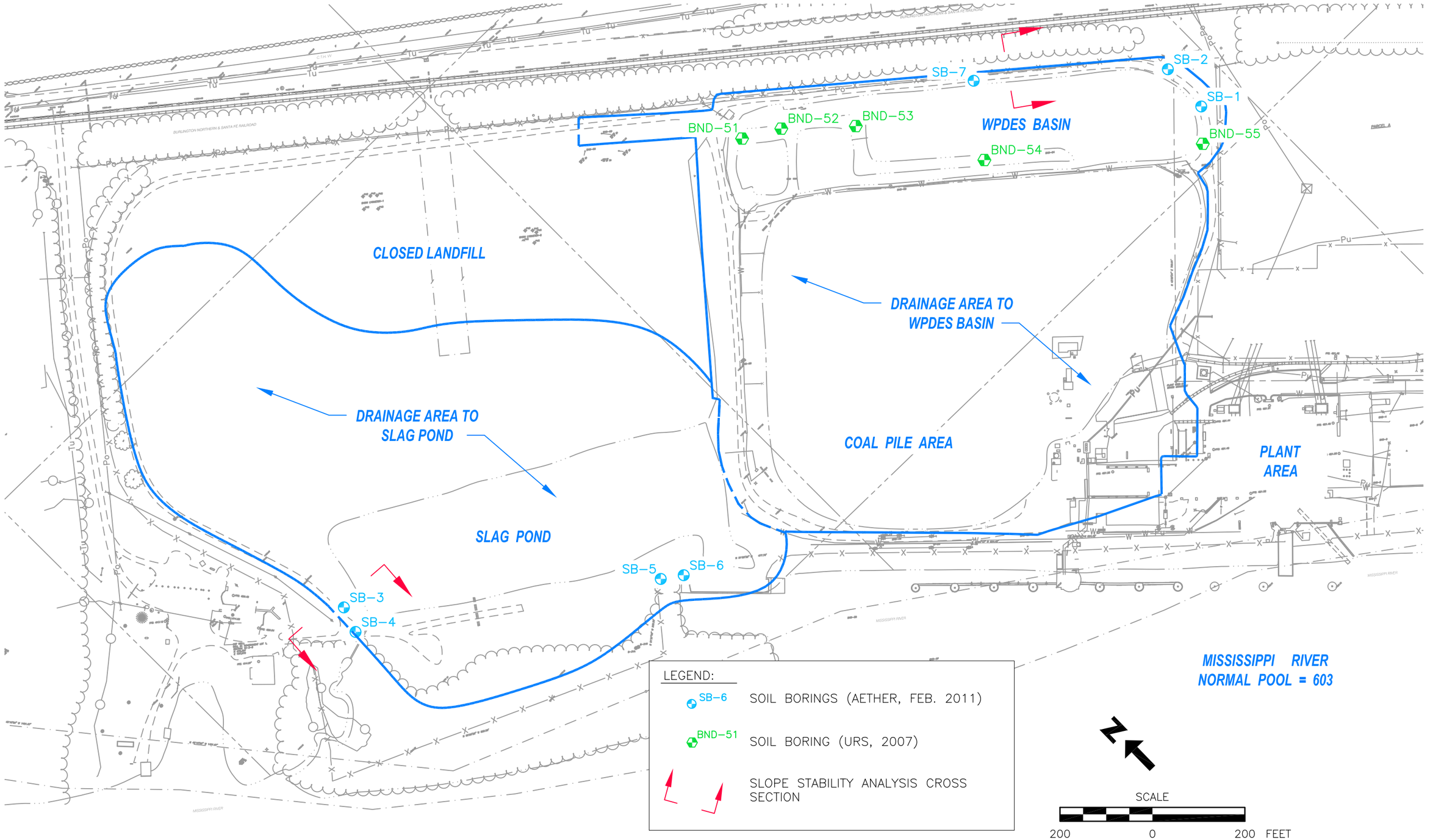
If you have any questions, please call or e-mail.

Very truly yours,

Timothy J. Harrington, P.E.



Thomas C. Wells, P.E.



REV	DATE	BY	DESCRIPTION
5			
4			
3			
2			
1			

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www.aetherdbs.com

SCALE:	AS SHOWN
DATE:	06-13-2012
DRAWN BY:	MM
CHKD. BY:	TCW
APPROVED:	06-13-2012

CLIENT / LOCATION

WISCONSIN POWER AND LIGHT
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

DRAWING DESCRIPTION

SITE PLAN

JOB 154

SHT. FIGURE 1

DWG. SITE PLAN

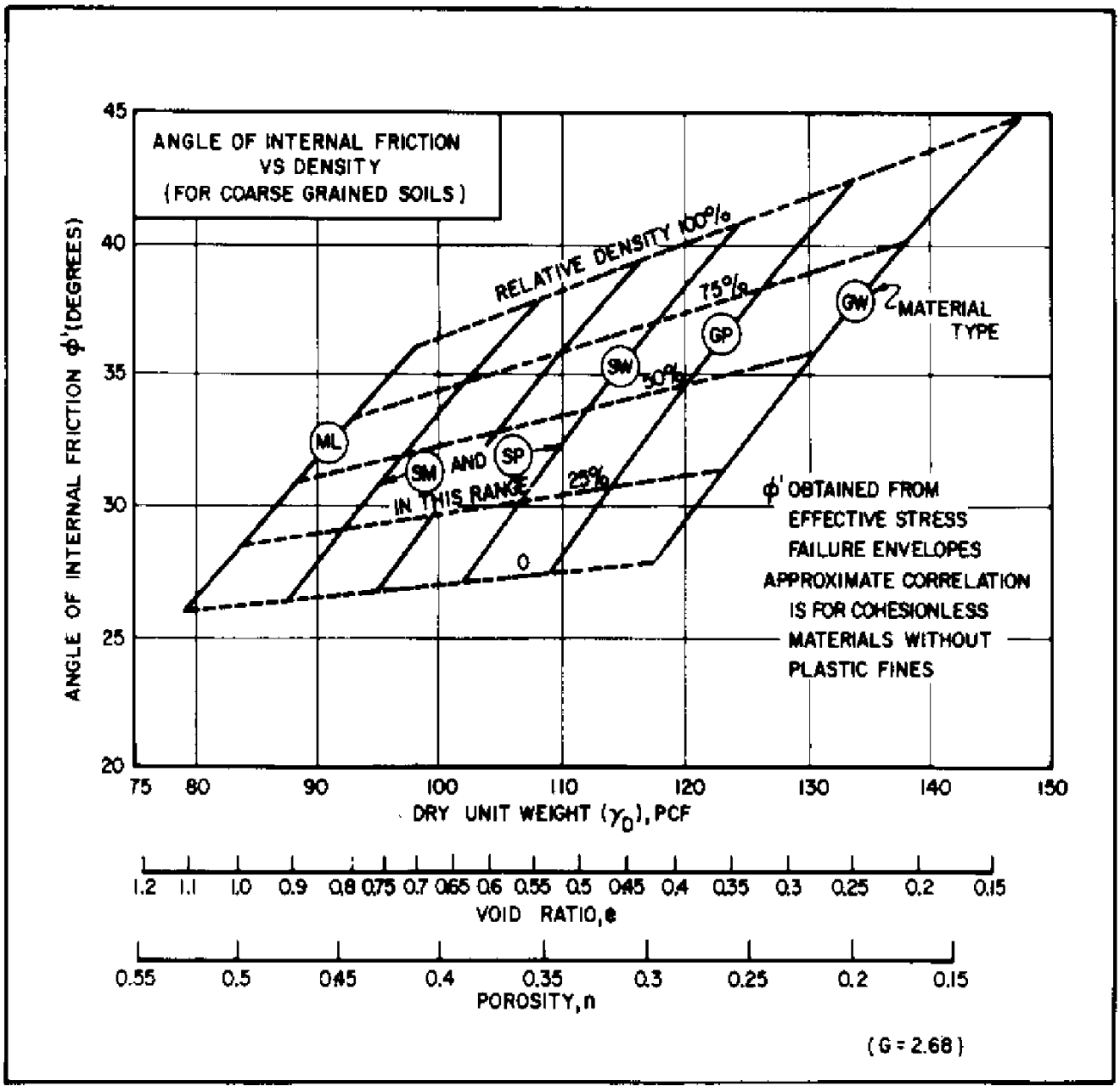

FIGURE 7
Correlations of Strength Characteristics for Granular Soils

7.1-149

FIGURE 2
Strength of Granular Materials
Nelson Dewey Generating Station

Source:
Design Manual - Soil Mechanics, Foundations, and Earth Structures
Naval Facilities Engineering Command, NAVFAC DM-7.01, 1986

Attachment A

Additional Soil Boring Logs
Nelson Dewey Generating Station

Source:
URS / Washington Group International, GEOTECHNICAL REPORT, Appendix B
Nelson Dewey, Cassville, Wisconsin, issued March 3, 2008

TTL Associates, Inc.
1915 N 12th Street
Toledo, Ohio 43624
Telephone: 419-324-2222
Fax: 419-241-1808

BORING NUMBER BND-51

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI
DRILLING CONTRACTOR TTL Associates TB CM
RIG NO. 550
GROUND ELEVATION 620.07 ft
DRILLING METHOD Rotary Wash
GROUND WATER LEVELS:
DATE STARTED 9/24/07
COMPLETED 9/25/07
AT TIME OF DRILLING 16.2 ft / Elev 603.9 ft
LOGGED BY KKC
CHECKED BY
AT END OF DRILLING None
NOTES
0hrs AFTER DRILLING Backfilled w/Grout

ELEVATION (ft)	DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / SPT N VALUE
620	0	TOPSOIL - 6 Inches						
		0.5' FILL - Moist Soft Brown SANDY LEAN CLAY	SS 1	42	1-2-2-3 (4)	0.25		▲
		2.0' FILL - Moist Loose Brown CLAYEY SAND	SS 2	75	2-3-4-3 (7)	NP		▲
615	5	4.0' FILL - Moist Very Stiff Brown/Gray SANDY LEAN CLAY w/Wood	SS 3	50	2-2-18-4 (20)	2.00		▲
		6.0' FILL - Moist Soft Gray SANDY LEAN CLAY	SS 4	50	3-2-2-3 (4)	0.25		▲
610	10	8.0' FILL - Moist Medium Dense Gray/Brown WOOD	SS 5	67	0-8-15-7 (23)	NP		▲
		14.0' Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 6	100	8-12-12 (24)	NP		▲
605	15	▽ -Wet						
600	20	-(Free Water in Jar Noted)	SS 7	22	5-7-5 (12)	NP		▲
		23.0' Wet Loose Brown POORLY GRADED SAND (SP) (Free Water in Jar Noted)	SS 8	89	5-4-4 (8)	NP		▲
595	25							
590	30	-w/Trace Gravel (Free Water in Jar Noted)	SS 9	100	4-4-4 (8)	NP		▲

(Continued Next Page)

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BORING NUMBER BND-51

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲
			33.0'						
585	35		Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel,Clay,and Silt (SP)	SS 10	44	5-5-6 (11)	NP		▲ 11
580	40		-Wet (Free Water in Jar Noted)	SS 11	44	7-8-7 (15)	NP		▲ 15
575	45		-Moist	SS 12	56	5-6-6 (12)	NP		▲ 11
570	50			SS 13	56	6-5-6 (11)	NP		▲ 11
565	55			SS 14	44	10-7-6 (13)	NP		▲ 13
560	60			SS 15	78	8-10-10 (20)	NP		▲ 18
555	65			SS 16	89	10-10-8 (18)	NP		▲ 18

(Continued Next Page)

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CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲ (20 40 60 80)
550	70			SS 17	44	6-6-7 (13)	NP		▲
545	75		-Wet (Free Water in Jar Noted)	SS 18	89	16-7-7 (14)	NP		▲
540	80		-Moist	SS 19	78	8-12-12 (24)	NP		▲
535	85		-Wet (Free Water in Jar Noted)	SS 20	56	7-8-7 (15)	NP		▲
			88.5'						
530	90		Moist Medium Dense Brown SILTY SAND w/Trace Gravel (SM)	SS 21	89	10-14-16 (30)	NP		17 ● ▲
525	95		-Wet (Free Water in Jar Noted)	SS 22	67	8-9-21 (30)	NP		▲
			98.5'						
520	100		Moist Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 23	78	10-16-30 (46)	NP		▲

(Continued Next Page)

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BORING NUMBER BND-51

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲ (20 40 60 80)
515	105			SS 24	78	16-14-18 (32)	NP		▲
510	110		-Wet Very Dense w/Gravel (Free Water in Jar Noted)	SS 25	100	38-50/4"	NP		>>▲
505	115		-w/Trace Gravel (Free Water in Jar Noted)	SS 26	94	38-46-46 (92)	NP		▲
			118.5'						
	120		Wet Very Dense Brown WELL GRADED GRAVEL w/Silt and Sand (GW-GM) (Free Water in Jar Noted) 120.0'	SS 27	100	64	NP		15 ●
			Bottom of hole at 120.0 feet.						

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BORING NUMBER BND-52

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI
DRILLING CONTRACTOR TTL Associates TB CM
RIG NO. 550
GROUND ELEVATION 622.67 ft
DRILLING METHOD Rotary Wash
GROUND WATER LEVELS:
DATE STARTED 9/25/07
COMPLETED 9/26/07
AT TIME OF DRILLING 17.0 ft / Elev 605.7 ft
LOGGED BY KKC
CHECKED BY
AT END OF DRILLING None
NOTES
0hrs AFTER DRILLING Piezometer Set -

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / SPT N VALUE
	0		TOPSOIL - 8 Inches						
			0.7'						
			FILL - Moist Loose Brown CLAYEY SAND w/Trace Coal	SS 1	100	2-2-3-2 (5)	NP		▲
620			-Gray/Brown	SS 2	100	3-3-3-3 (6)	NP		▲
	5		-Very Loose Gray w/Trace Gravel	SS 3	100	2-1-1-2 (2)	NP		▲
			6.0'						
			FILL - Moist Very Loose Gray POORLY GRADED SAND w/Silt and Trace Gravel	SS 4	100	2-2-1-2 (3)	NP		▲
615				SS 5	100	1-1-1-1 (2)	NP		▲
	10								
610			13.0'						
			FILL - Moist Loose Brown POORLY GRADED SAND	SS 6	100	5-5-5 (10)	NP		▲
	15								
			17.0' ▽						
605			Wet Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted)	SS 7	100	3-4-7 (11)	NP		▲
	20								
600			23.0'						
			Moist Loose Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 8	100	5-5-5 (10)	NP		▲
	25								
595				SS 9	67	4-4-4 (8)	NP		▲
	30								

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Fax: 419-241-1808

BORING NUMBER BND-52

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲
590	35			SS 10	56	4-5-5 (10)	NP		▲
585			38.5'						
	40		Moist Medium Dense Brown POORLY GRADED SAND w/Trace Clay,Gravel,and Silt (SP)	SS 11	44	3-6-6 (12)	NP		▲
580	45			SS 12	67	4-6-6 (12)	NP		▲
575	50			SS 13	67	5-6-7 (13)	NP		▲
570	55			SS 14	100	10-10-10 (20)	NP		▲
565	60			SS 15	100	6-7-7 (14)	NP		▲ 19
560	65		-Wet (Free Water in Jar Noted)	SS 16	67	5-6-8 (14)	NP		▲

(Continued Next Page)

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BORING NUMBER BND-52

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲
555									20 40 60 80
			68.5'						
	70		Moist Loose Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 17	67	6-4-6 (10)	NP		▲
550									
			74.0'						
	75		Wet Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted)	SS 18	100	6-12-12 (24)	NP		▲
545									
	80		-Moist	SS 19	56	8-8-12 (20)	NP		▲
540									
			83.5'						
	85		Moist Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 20	67	12-16-16 (32)	NP		▲
535									
	90		-Wet (Free Water in Jar Noted)	SS 21	67	22-26-12 (38)	NP		▲
530									
			93.5'						
	95		Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 22	67	8-8-20 (28)	NP		▲
525									
			98.5'						
	100		Moist Dense Brown POORLY GRADED SAND w/Trace Gravel,Clay,and Silt (SP)	SS 23	78	12-16-20 (36)	NP		▲

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BORING NUMBER BND-52

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL 20 40 60 80 ▲ SPT N VALUE ▲ 20 40 60 80
520									
				SS 24	89	16-20-22 (42)	NP		15 ● ▲
	105								
515			108.5'						
			Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 25	78	16-12-14 (26)	NP		▲
	110								
510			113.5'						
			Wet Very Dense Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted)	SS 26	100	30-37-40 (77)	NP		▲
	115								
505									
			-(Free Water in Jar Noted)	SS 27	100	17-18-40 (58)	NP		▲
	120		120.0'						
			Bottom of hole at 120.0 feet.						

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BORING NUMBER BND-53

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI
DRILLING CONTRACTOR TTL Associates CW MP
RIG NO. 111
GROUND ELEVATION 620.3 ft
DRILLING METHOD Rotary Wash
GROUND WATER LEVELS:
DATE STARTED 9/21/07
COMPLETED 9/21/07
▽ **AT TIME OF DRILLING** 18.5 ft / Elev 601.8 ft
LOGGED BY KKC
CHECKED BY
AT END OF DRILLING None
NOTES
0hrs AFTER DRILLING Backfilled w/Grout

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / SPT N VALUE
620	0		Moist Medium Stiff Gray SILT w/Clay and Trace Sand (ML) 2.0'	SS 1	100	2-3-2-2 (5)	1.00		▲
			Moist Stiff Gray SILT w/Clay and Trace Sand (ML) 4.0'	SS 2	75	4-5-4-5 (9)	2.00		▲
615	5		Moist Stiff Brown LEAN CLAY w/Sand (CL)	SS 3	75	4-7-5-5 (12)	2.00		▲
			8.5'	SS 4	75	5-5-4-4 (9)	1.00		▲
610	10		Moist Loose Gray/Brown CLAYEY SAND (SC) 13.5'	SS 5	100	2-3-3-4 (6)	NP		▲
605	15		Moist Medium Dense Brown POORLY GRADED SAND w/Gravel,Trace Silt,and Clay (SP)	SS 6	100	7-6-5 (11)	NP		6 ▲
			▽ 18.5' Wet Loose Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted)	SS 7	67	5-4-4 (8)	NP		▲
600	20		23.5'						
595	25		Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 8	67	5-10-15 (25)	NP		▲
590	30			SS 9	100	6-11-16 (27)	NP		▲

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BORING NUMBER BND-53

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲ (20 40 60 80)
585	35			SS 10	100	6-11-16 (27)	NP		▲
			38.5'						
580	40		Wet Dense Brown POORLY GRADED SAND w/Silt and Trace Gravel (SP-SM) (Free Water in Jar Noted)	SS 11	100	8-15-16 (31)	NP		25 ●▲
			43.5'						
575	45		Wet Medium Dense Brown POORLY GRADED SAND (SP) (Free Water in Jar Noted)	SS 12	100	6-7-8 (15)	NP		▲
			48.5'						
570	50		Moist Loose Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 13	100	4-4-6 (10)	NP		▲
			53.5'						
565	55		Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP)	SS 14	100	4-5-8 (13)	NP		▲
560	60		-Wet (Free Water in Jar Noted)	SS 15	67	4-6-7 (13)	NP		▲
555	65		-Moist	SS 16	67	6-6-5 (11)	NP		▲

(Continued Next Page)

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BORING NUMBER BND-53

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲ (20 40 60 80)
550	70			SS 17	100	8-6-6 (12)	NP		▲
545	75			SS 18	67	7-9-10 (19)	NP		▲
	80		80.0' Bottom of hole at 80.0 feet.	SS 19	67	5-7-9 (16)	NP		▲

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BORING NUMBER BND-54

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI
DRILLING CONTRACTOR TTL Associates CW MP
RIG NO. 111
GROUND ELEVATION 619.86 ft
DRILLING METHOD Rotary Wash
GROUND WATER LEVELS:
DATE STARTED 9/22/07
COMPLETED 9/22/07
AT TIME OF DRILLING 18.0 ft / Elev 601.9 ft
LOGGED BY KKC
CHECKED BY
AT END OF DRILLING None
NOTES
0hrs AFTER DRILLING Backfilled w/Grout

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲
	0		Moist Loose Brown/Gray CLAYEY SAND w/Organics (SC)	SS 1	100	3-3-6-6 (9)	NP		
			2.0' Moist Stiff Brown LEAN CLAY w/Trace Sand (CL)	SS 2	100	5-5-8-8 (13)	4.00		
615	5		5.0' Moist Stiff Gray/Brown SANDY LEAN CLAY (CL)	SS 3	100	4-4-5-9 (9)	3.00		
			7.0' Moist Medium Dense Gray CLAYEY SAND (SC)	SS 4	100	8-6-9-9 (15)	NP		
			8.0' Moist Loose Brown POORLY GRADED SAND w/Silt (SP/SM)	SS 5	75	3-3-4-5 (7)	NP		
610	10		-w/Trace Gravel						
				SS 6	67	2-4-6 (10)	NP		
605	15		▽						
			-Wet (Free Water in Jar Noted)	SS 7	100	4-4-4 (8)	NP		
600	20								
			-Moist	SS 8	100	1-2-5 (7)	NP		18
595	25								
			29.0' -Very Loose	SS 9	100	2-2-2 (4)	NP		
590	30		Moist Medium Dense Brown POORLY GRADED SAND w/Trace Gravel,Silt,and Clay (SP)						

(Continued Next Page)

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BORING NUMBER BND-54

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL 20 40 60 80 ▲ SPT N VALUE ▲ 20 40 60 80
585	35			SS 10	100	4-5-7 (12)	NP		▲
580	40		-Wet (Free Water In Jar Noted)	SS 11	100	9-7-10 (17)	NP		▲
575	45		-(Free Water in Jar Noted)	SS 12	100	5-8-12 (20)	NP		▲
570	50		-Moist	SS 13	100	10-12-14 (26)	NP		17 ● ▲
565	55			SS 14	100	6-7-9 (16)	NP		▲
560	60			SS 15	67	5-7-7 (14)	NP		▲
555	65		-Wet (Free Water in Jar Noted)	SS 16	67	5-6-7 (13)	NP		▲

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TTL_GEOTECH_STANDARD_3128.01.GPJ GINT US LAB.GDT 12/19/07

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BORING NUMBER BND-54

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL 20 40 60 80 ▲ SPT N VALUE ▲ 20 40 60 80
550	70		-(Free Water in Jar Noted)	SS 17	67	5-7-9 (16)	NP		▲
545	75		-(Free Water in Jar Noted)	SS 18	67	6-8-8 (16)	NP		▲
			78.5'						
540	80		Wet Very Dense Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted) 80.0'	SS 19	67	10-21-32 (53)	NP		▲
			Bottom of hole at 80.0 feet.						

TTL_GEOTECH_STANDARD 3128.01.GPJ GINT US LAB.GDT 12/19/07

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BORING NUMBER BND-55

CLIENT Washington Group
PROJECT NAME Nelson Dewey Units 1 and 2
PROJECT NUMBER 3128.01
PROJECT LOCATION Cassville, WI
DRILLING CONTRACTOR TTL Associates CW MP
RIG NO. 111
GROUND ELEVATION 621.90 ft
DRILLING METHOD Rotary Wash
GROUND WATER LEVELS:
DATE STARTED 9/24/07
COMPLETED 9/24/07
AT TIME OF DRILLING 18.5 ft / Elev 603.4 ft
LOGGED BY KKC
CHECKED BY
AT END OF DRILLING None
NOTES
0hrs AFTER DRILLING Backfilled w/Grout

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / SPT N VALUE
620	0		Moist Medium Dense Dark Brown POORLY GRADED SAND w/Trace Gravel (SP) 2.0'	SS 1	100	4-5-6-5 (11)	NP		
			Moist Stiff Gray/Brown LEAN CLAY w/Sand (CL)	SS 2	100	5-5-10-10 (15)	2.00		
	5		-Very Stiff 6.0'	SS 3	100	8-8-9-12 (17)	2.50		
615			Moist Medium Dense Brown POORLY GRADED SAND (SP) 8.5'	SS 4	100	12-12-10-8 (22)	NP		
	10		Moist Loose Gray SILTY SAND w/Trace Clay (SM)	SS 5	100	0-2-3-3 (5)	NP		18
610			14.0'						
	15		Moist Stiff Brown/Gray SANDY LEAN CLAY (CL)	SS 6	100	5-5-6 (11)	0.75		
605			▽ 18.5'						
	20		Wet Loose Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted)	SS 7	100	3-4-2 (6)	NP		
600									
	25		-(Free Water in Jar Noted)	SS 8	100	1-2-3 (5)	NP		
595									
	30		-Very Loose (Free Water in Jar Noted)	SS 9	100	1-1-1 (2)	NP		

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BORING NUMBER BND-55

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / ▲ SPT N VALUE ▲ 20 40 60 80
590									
	35		-Moist Loose	SS 10	100	1-2-4 (6)	NP		▲
585									
	40		-Wet (Free Water in Jar Noted)	SS 11	100	2-3-3 (6)	NP		▲
580			43.5'						
	45		Wet Medium Dense Brown POORLY GRADED SAND w/Trace Gravel (SP) (Free Water in Jar Noted)	SS 12	100	7-9-5 (14)	NP		▲
575									
	50		-Moist	SS 13	67	7-6-7 (13)	NP		▲
570			53.5'						
	55		Wet Medium Dense Brown POORLY GRADED GRAVEL w/Sand (GP) (Free Water in Jar Noted)	SS 14	67	12-21-9 (30)	NP		▲
565			58.5'						
	60		Wet Medium Dense Brown POORLY GRADED SAND w/Trace Silt and Clay (SP) (Free Water in Jar Noted)	SS 15	67	9-7-9 (16)	NP		▲
560									
	65		-w/Trace Gravel (Free Water in Jar Noted)	SS 16	67	9-11-10 (21)	NP		▲

(Continued Next Page)

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BORING NUMBER BND-55

CLIENT Washington Group **PROJECT NAME** Nelson Dewey Units 1 and 2

PROJECT NUMBER 3128.01 **PROJECT LOCATION** Cassville, WI

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL 20 40 60 80 ▲ SPT N VALUE ▲ 20 40 60 80
555									
			-Moist	SS 17	67	6-14-15 (29)	NP		▲
	70								
550									
				SS 18	67	7-8-7 (15)	NP		21 ▲●
	75								
545									
				SS 19	67	8-9-8 (17)	NP		▲
	80		80.0' Bottom of hole at 80.0 feet.						

Attachment B

Groundwater and River Levels
Nelson Dewey Generating Station

Source:
URS / Washington Group International, GEOTECHNICAL Report, Appendix C
Nelson Dewey, Cassville, Wisconsin, issued March 3, 2008

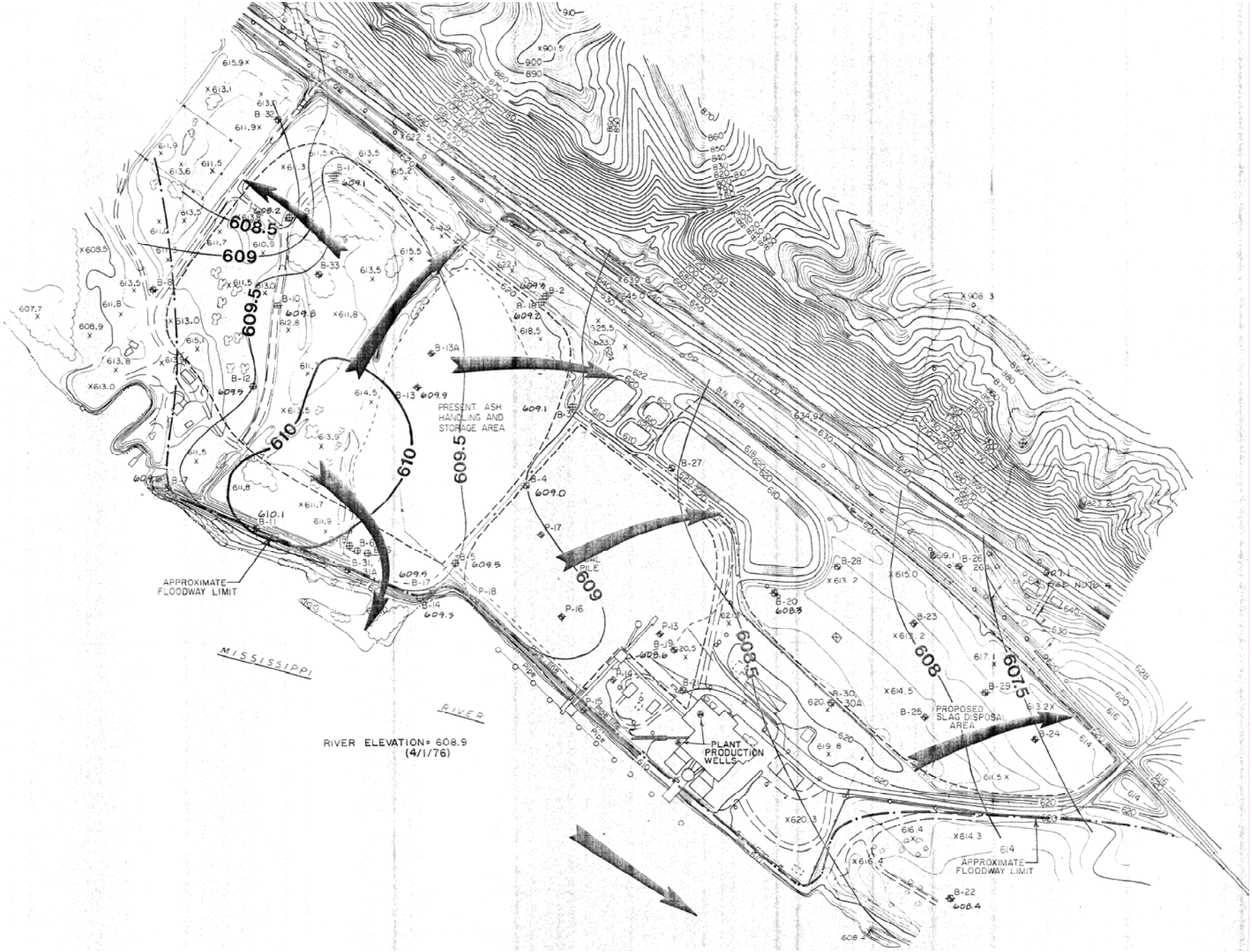


Figure C-1. Water Table Map – April 1976 (WARZIN 1981)

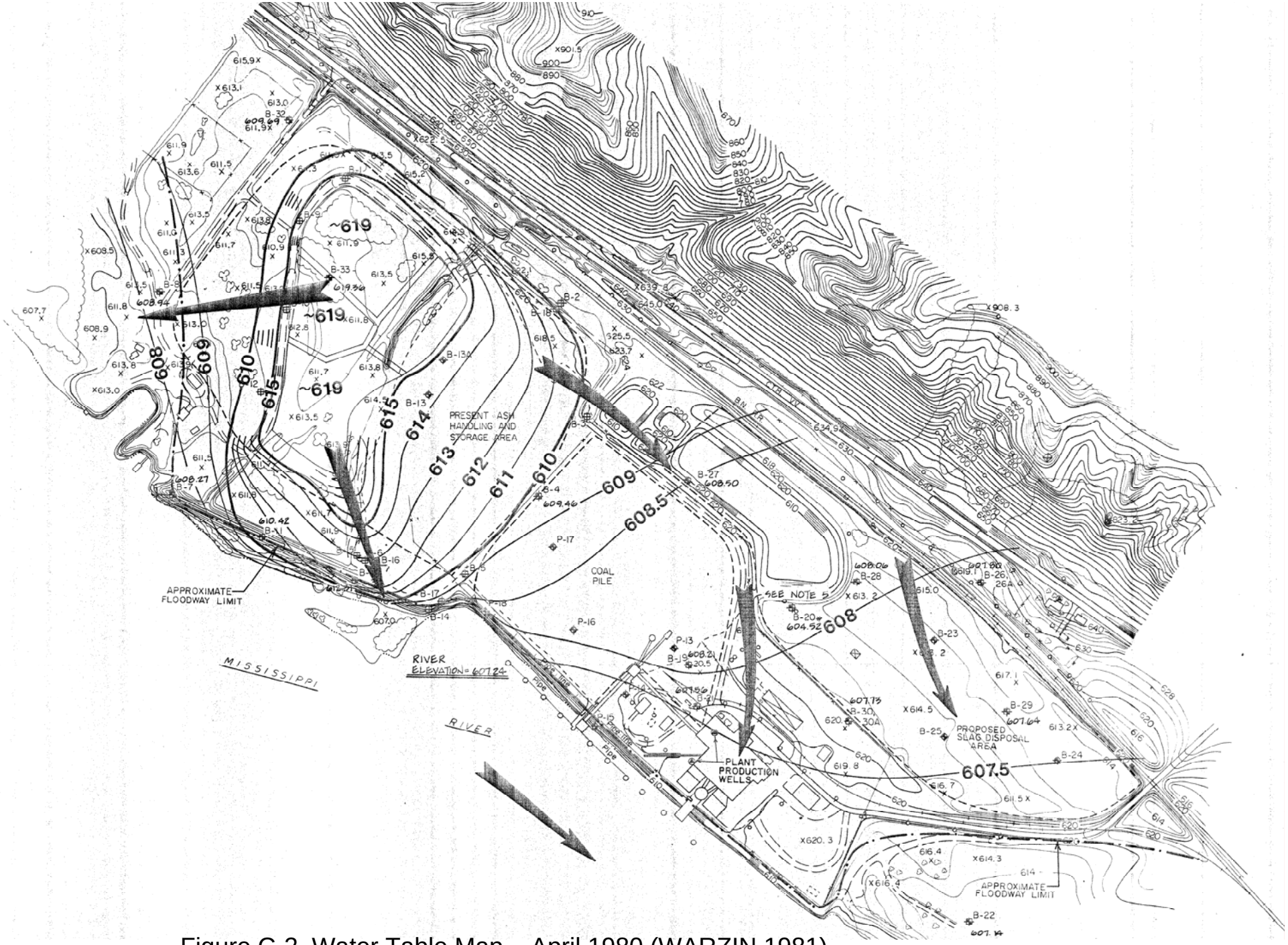


Figure C-2. Water Table Map – April 1980 (WARZIN 1981)

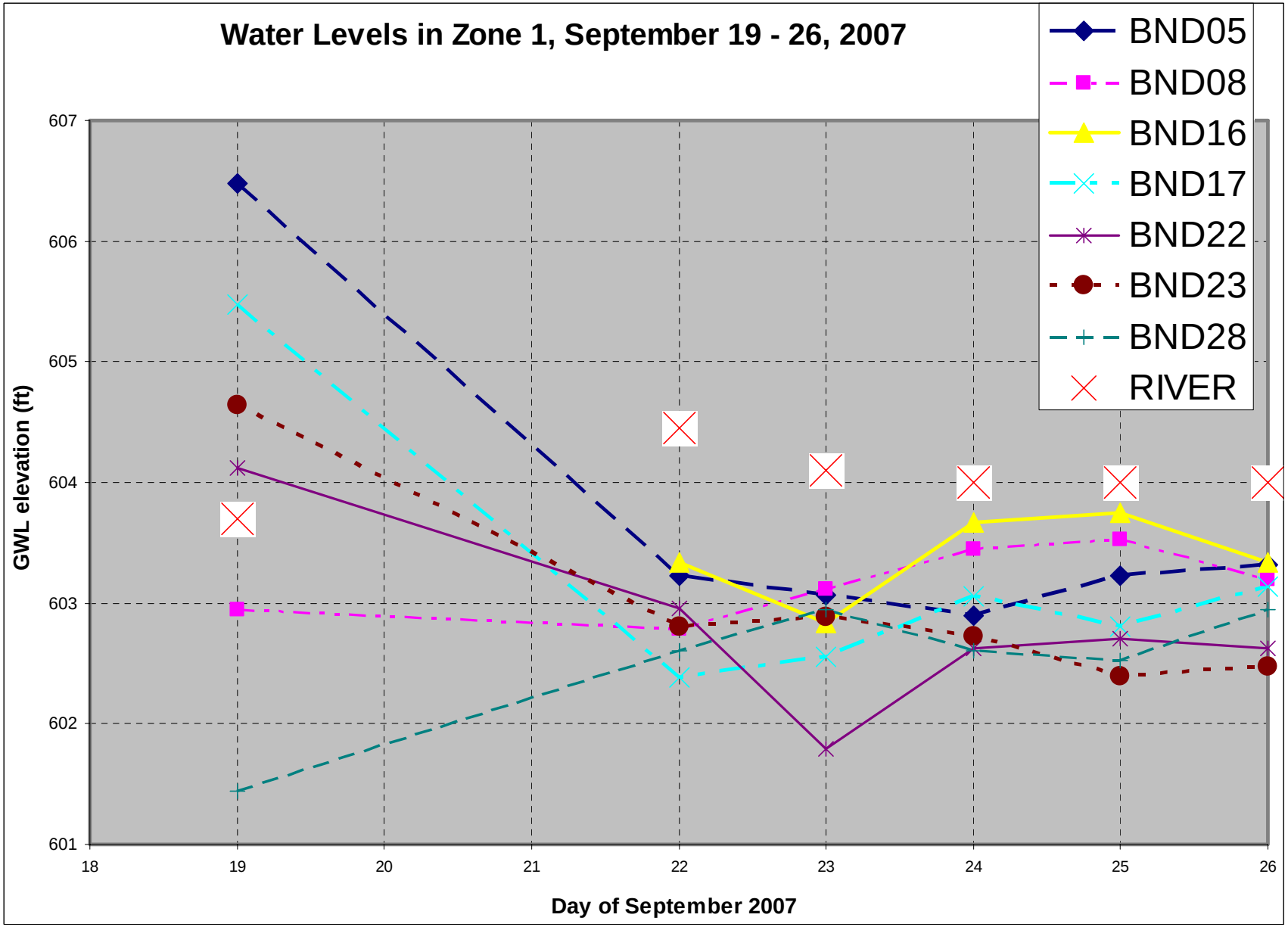
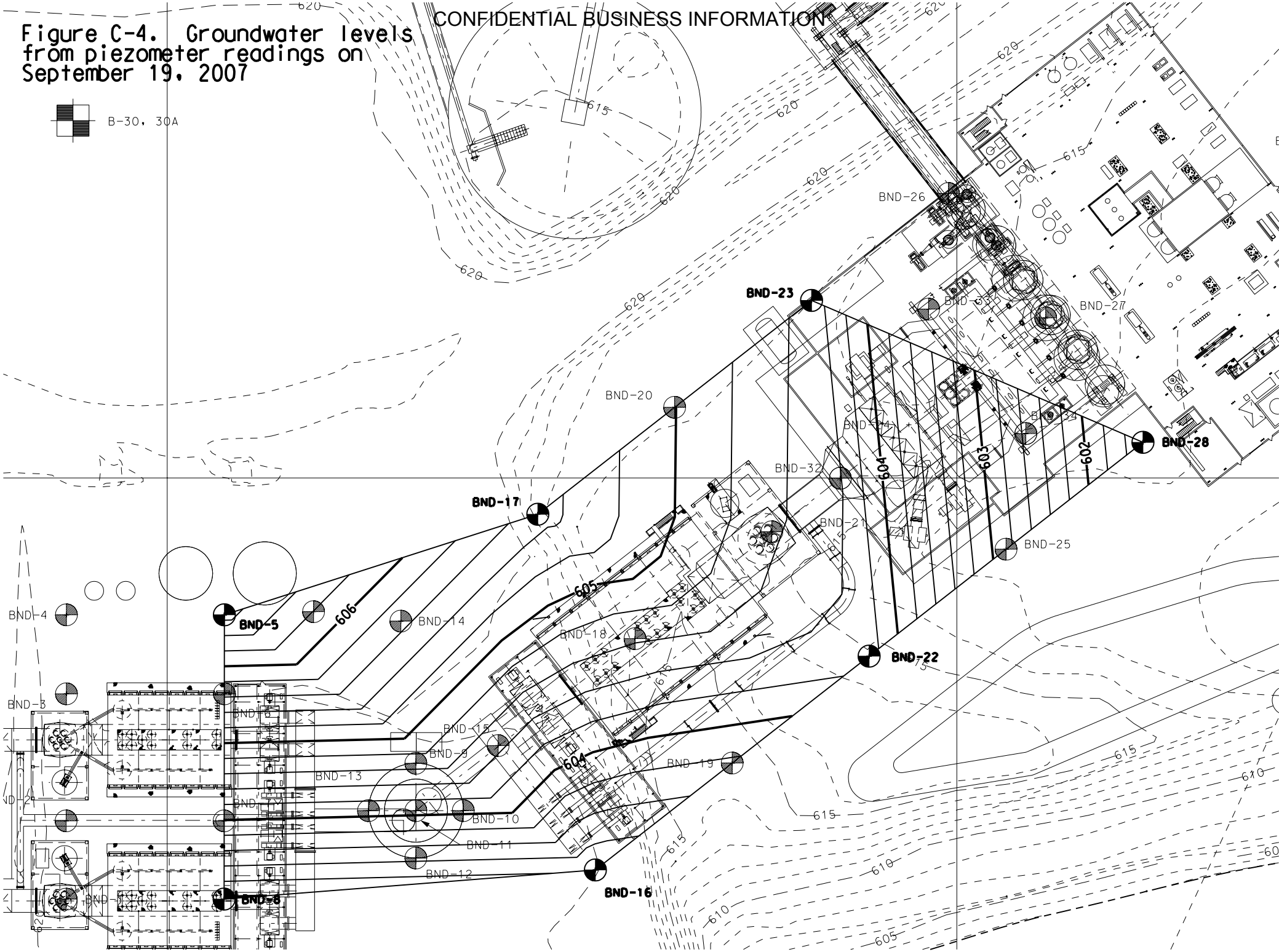


Figure C-3. Piezometer readings in the plant area (Zone 1) and river levels during September 19-26, 2007

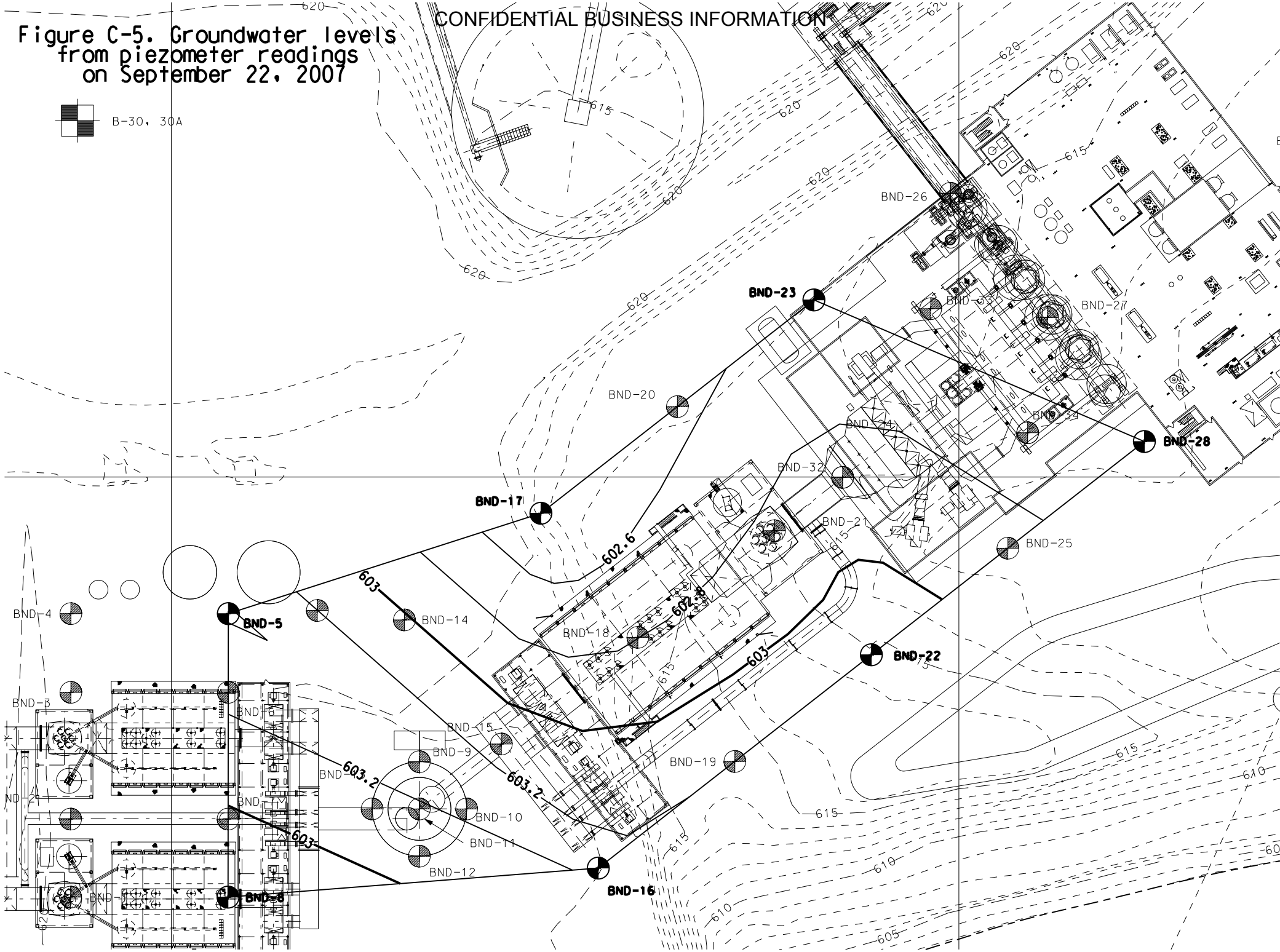
CONFIDENTIAL BUSINESS INFORMATION

Figure C-4. Groundwater levels from piezometer readings on September 19, 2007



CONFIDENTIAL BUSINESS INFORMATION

Figure C-5. Groundwater levels from piezometer readings on September 22, 2007



CONFIDENTIAL BUSINESS INFORMATION

Figure C-6. Groundwater levels from piezometer readings on September 23, 2007

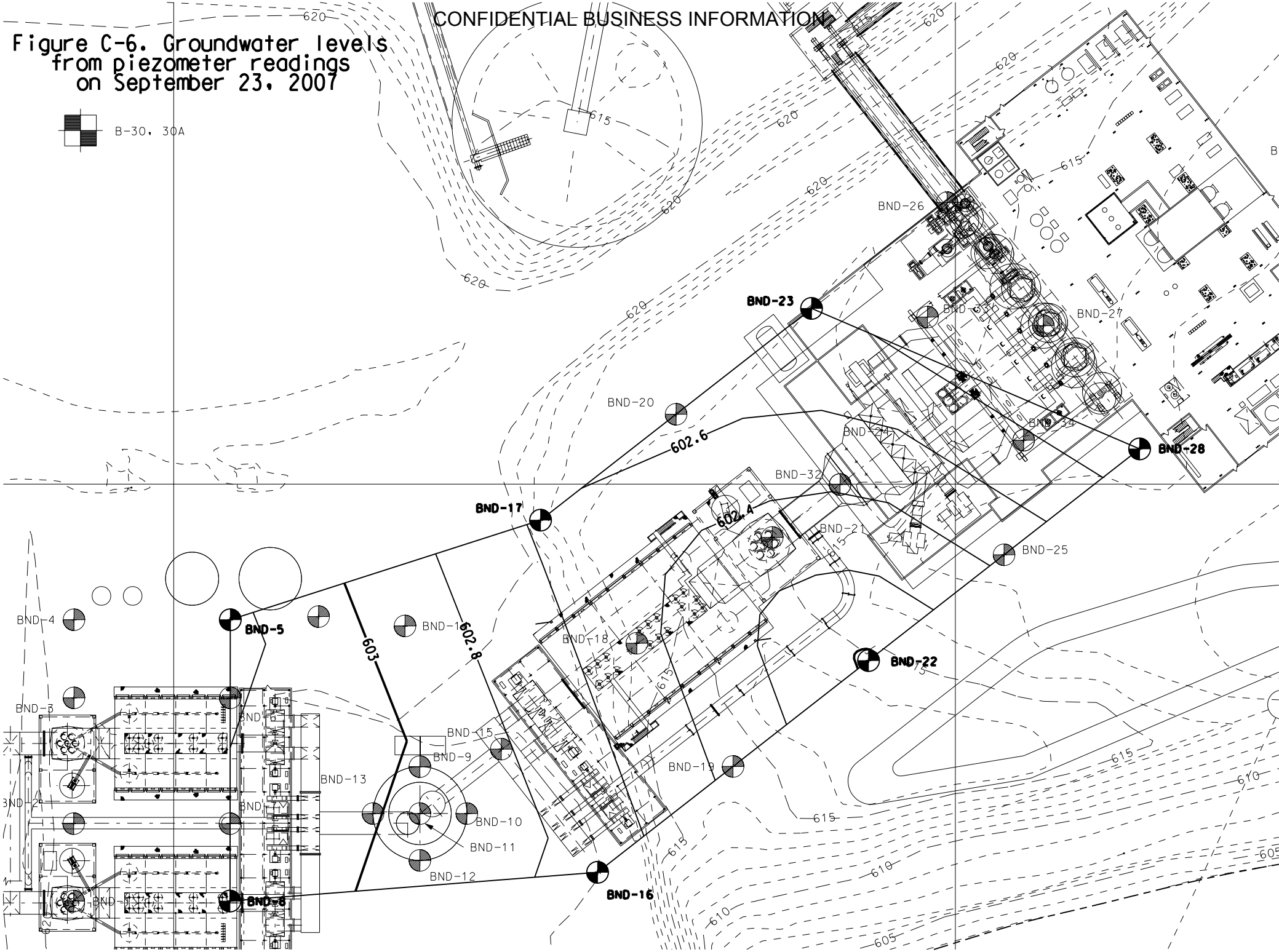


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Figure C-7. Groundwater levels from piezometer readings on September 24, 2007

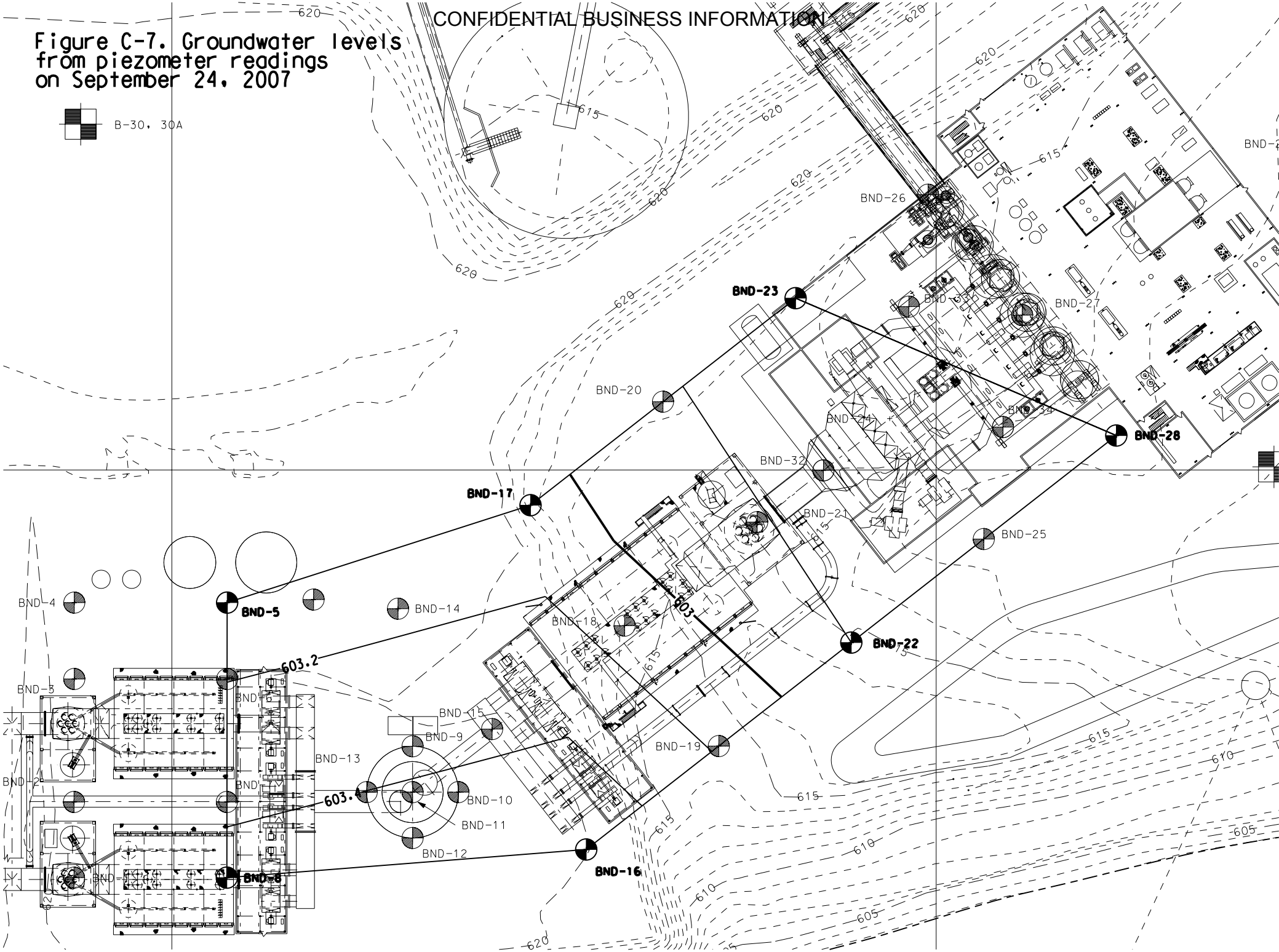

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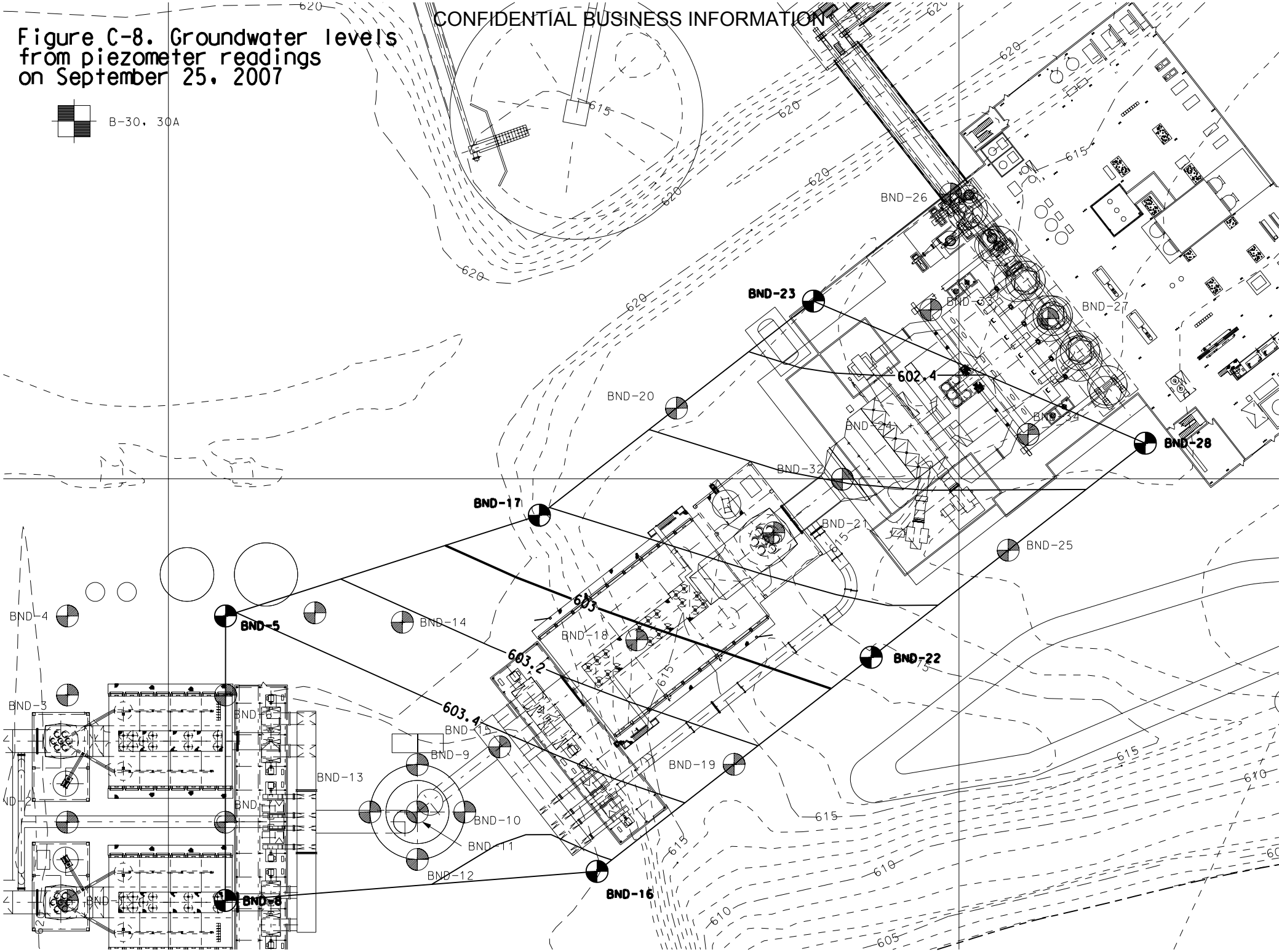
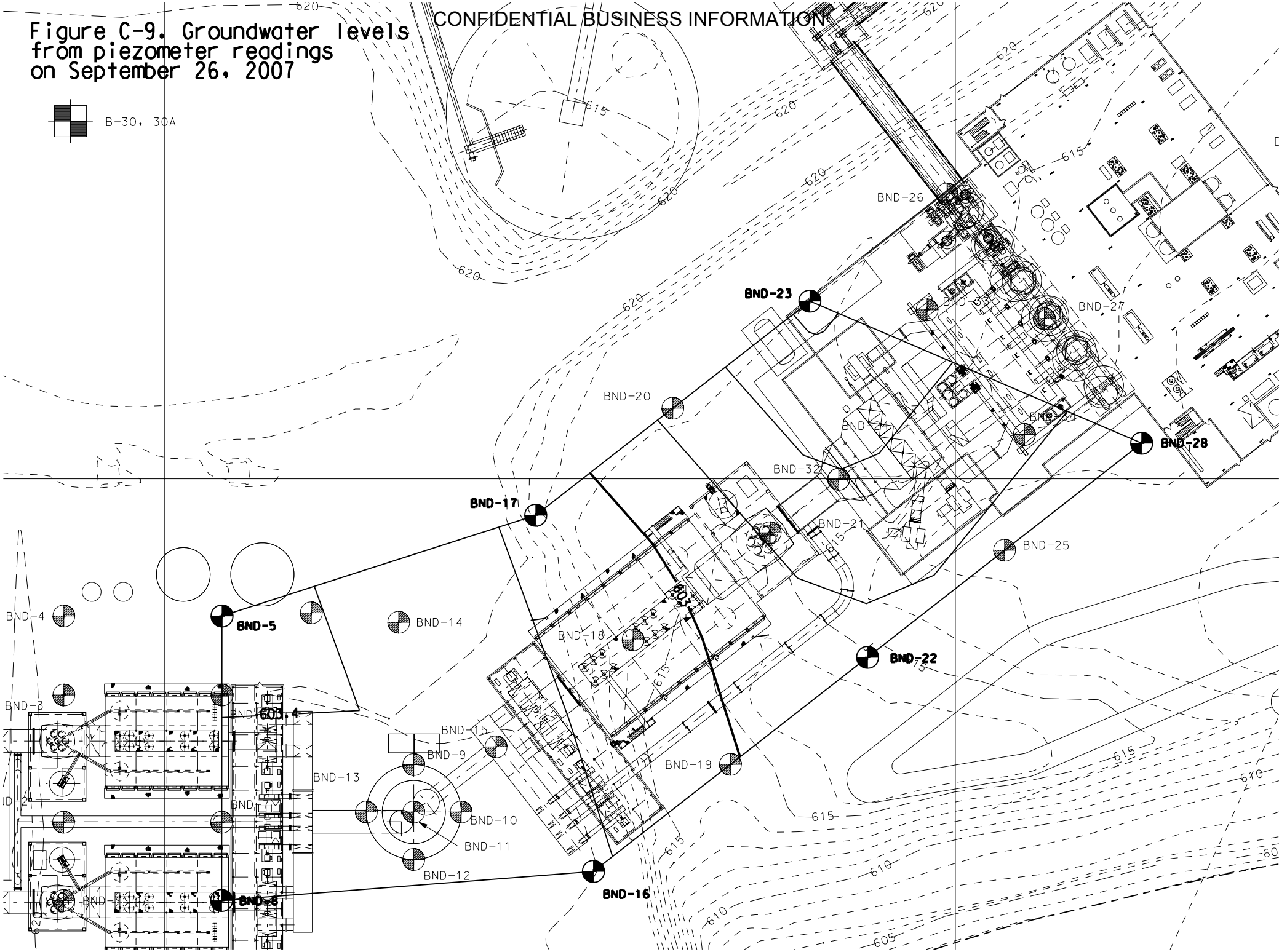
Figure C-8. Groundwater levels from piezometer readings on September 25, 2007



CONFIDENTIAL BUSINESS INFORMATION

Figure C-9. Groundwater levels from piezometer readings on September 26, 2007



EtaPRO NELSON DEWEY on NEDWINETAPRO2 Historical Trend

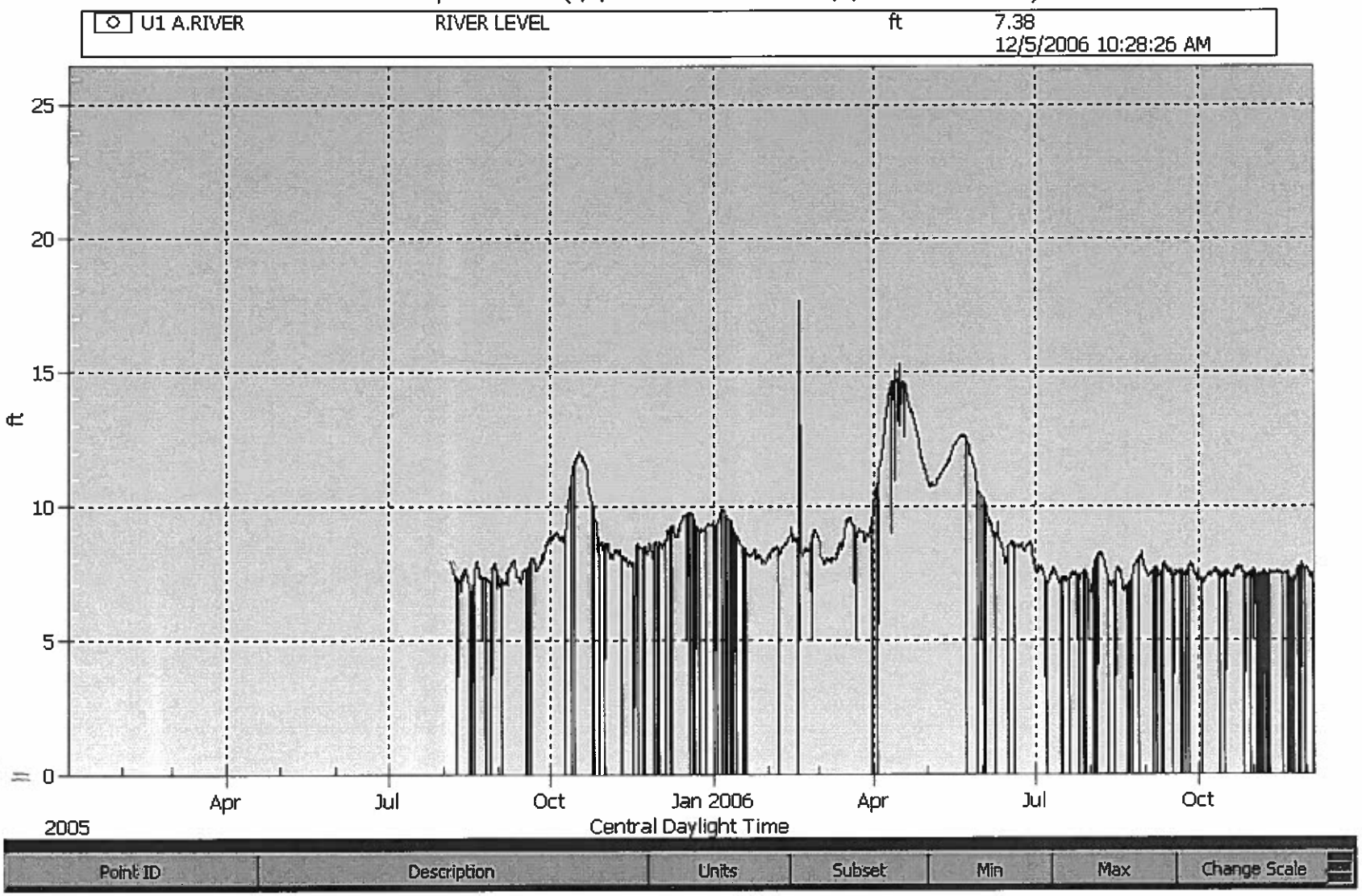
CONFIDENTIAL BUSINESS INFORMATION

2005

2/1/2005 10:30:18, 21.18

Alliant Nelson Dewey

All Shifts Snapshot Values (1/1/2005 10:28:26 AM to 12/5/2006 10:28:26 AM)



596.65' = 0

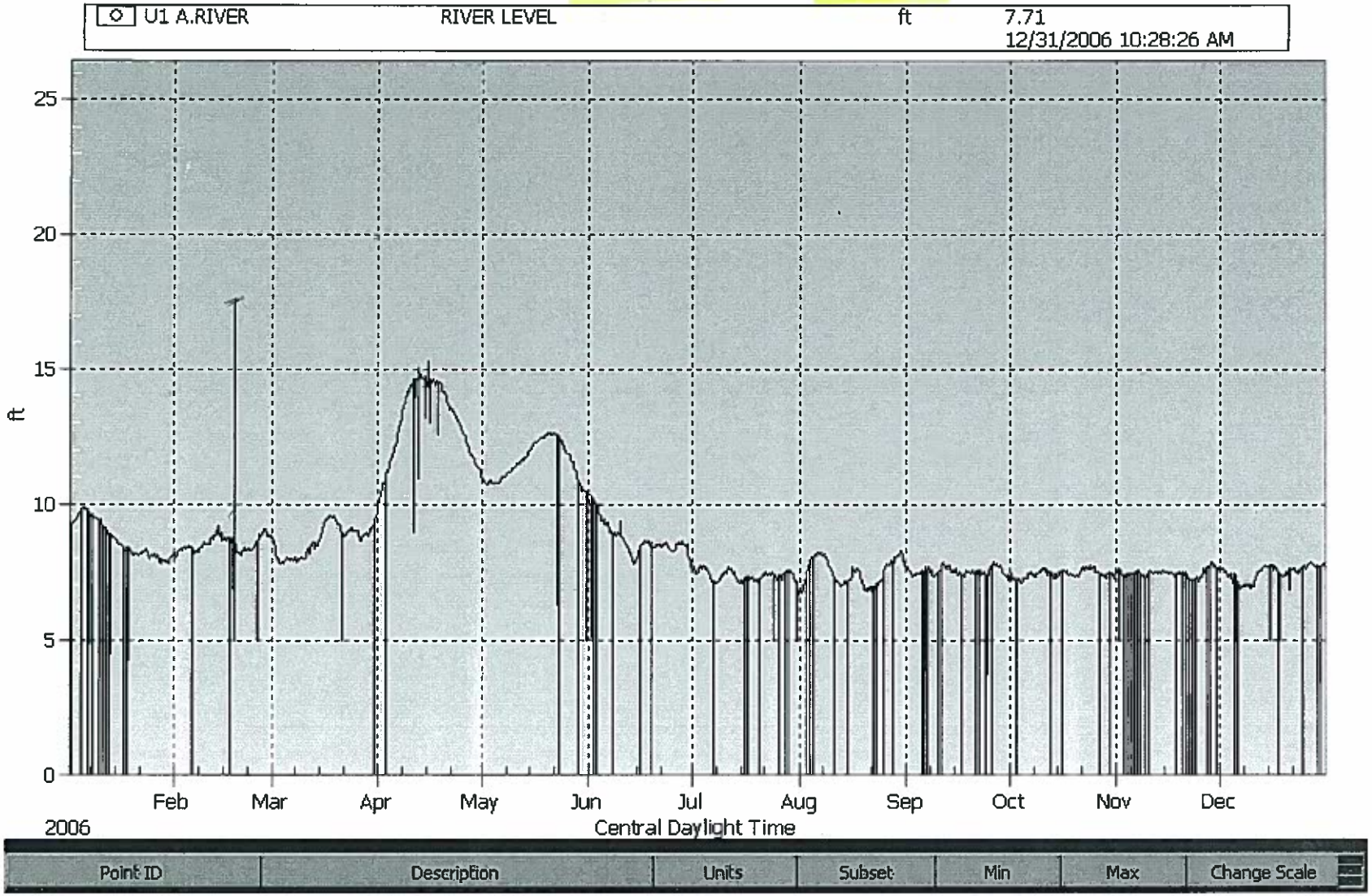
EtaPRO NELSON DEWEY on NEDWINETAPRO2 Historical Trend

2006

1/9/2006 22:25:38, 21.12

Alliant Nelson Dewey

All Shifts Snapshot Values (1/1/2006 10:28:26 AM to 12/31/2006 10:28:26 AM)



EtaPRO NELSON DEWEY on NEDWINETAPRO2 Historical Trend

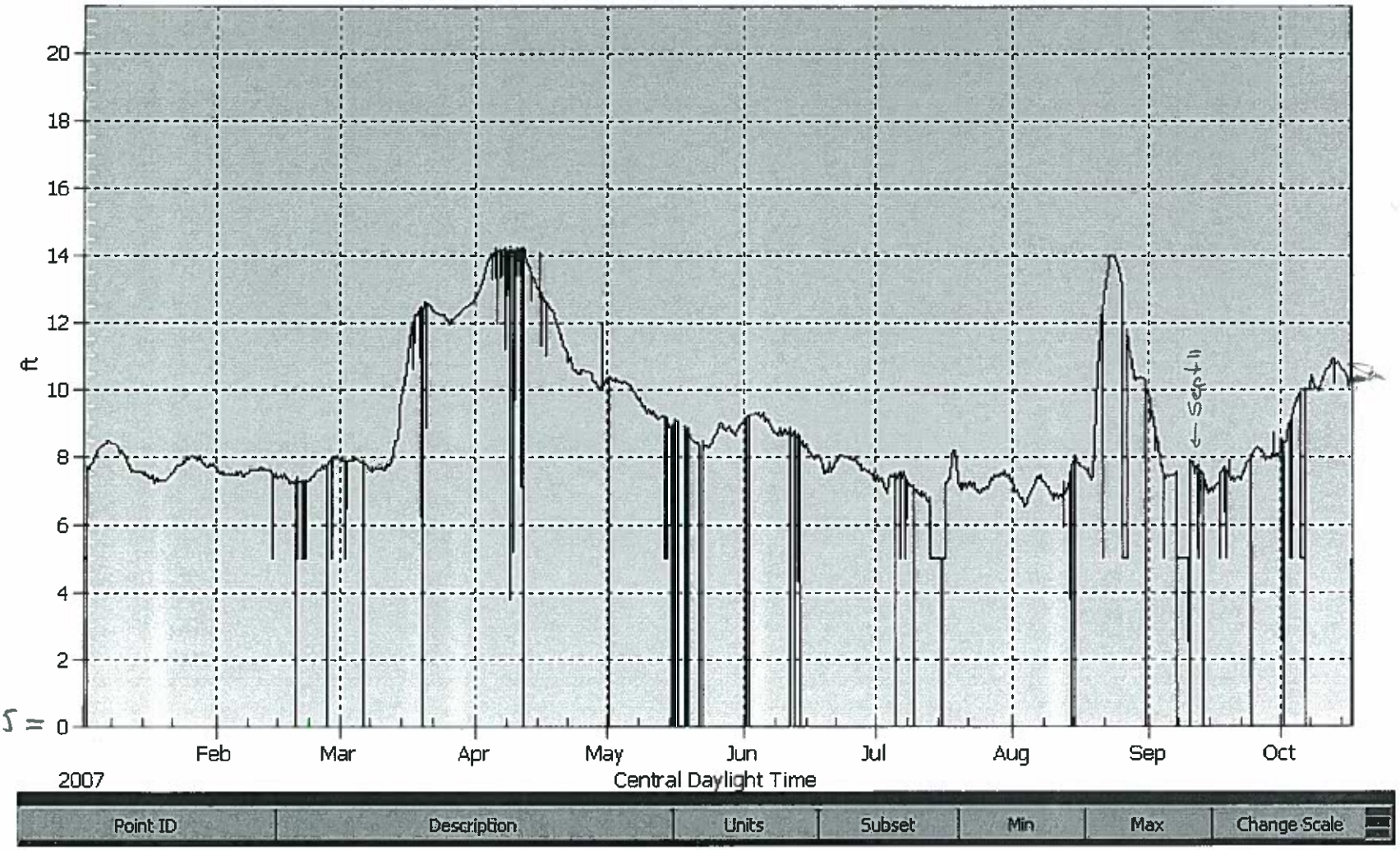
2007

1/7/2007 1:24:56, 17.05

Alliant Nelson Dewey

All Shifts Snapshot Values (1/1/2007 10:28:26 AM to 10/17/2007 10:28:26 AM)

U1 A.RIVER	RIVER LEVEL	ft	10.17 10/17/2007 10:28:26 AM



Point ID	Description	Units	Subset	Min	Max	Change Scale

596.65 =

596.65 + 7.7 ≈ 604.35

5.4 mm = 1 ft

Sept →

PIEZOMETER READINGS

Nelson Dewey Units 1 and 2

TTL Project No. 3128.01

	9/19/2007		9/22/2007		9/23/2007		9/24/2007		9/25/2007		9/26/2007	
Boring	feet	inches	feet	inches	feet	inches	feet	inches	feet	inches	feet	inches
BND-5	14	0	17	3	17	5	17	7	17	3	17	2
BND-8	17	6	17	8	17	4	17	0	16	11	17	3
BND-16	**	NA	16	10	17	4	16	6	16	5	16	10
BND-17	11	9	14	10	14	8	14	2	14	5	14	1
BND-22	11	2	12	4	13	6	12	8	12	7	12	8
BND-23	11	6	13	4	13	3	13	5	13	9	13	8
BND-28	12	2	11	0	10	8	11	0	11	1	10	8
BND-51*		NA		NA		NA		NA		NA		NA

NOTE: Depths measured from existing ground surface

*Boring BND-51 was drilled on 9/26/07

**Boring BND-16 was not drilled yet on 9/19/07

Attachment C

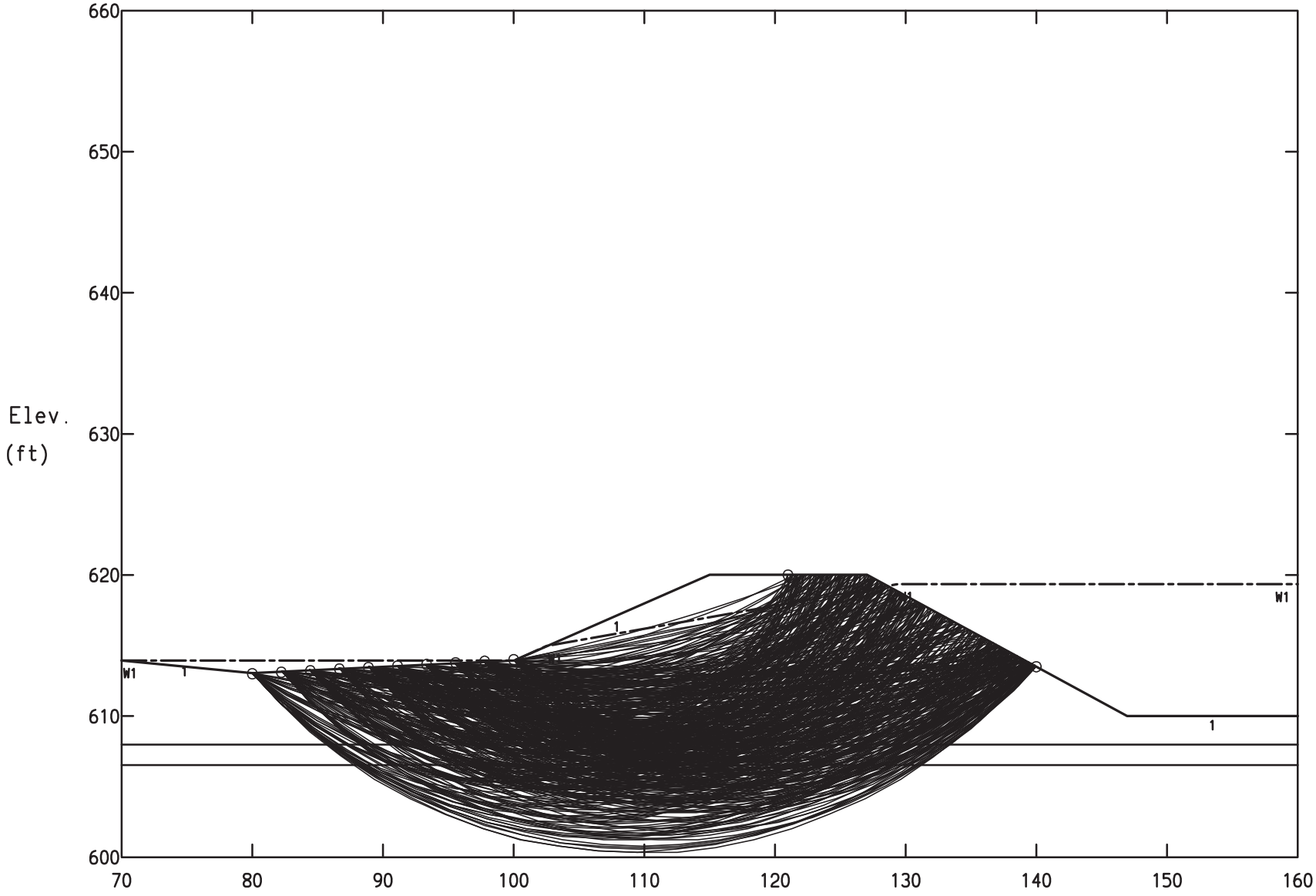
WPDES Pond Slope Stability Analyses
Potential Failure Surfaces Analyzed
Nelson Dewey Generating Station

Source:
Program pcSTABL5m/SI output by Aether dbs, June 2012

CONFIDENTIAL BUSINESS INFORMATION

Alliant Cassville WPDES Basin Dike - Static Case with high water

All surfaces evaluated. C:CASS02S.PLT By: TCW 06-12-12 9:39am



Factors Of Safety Calculated By The Modified Bishop Method

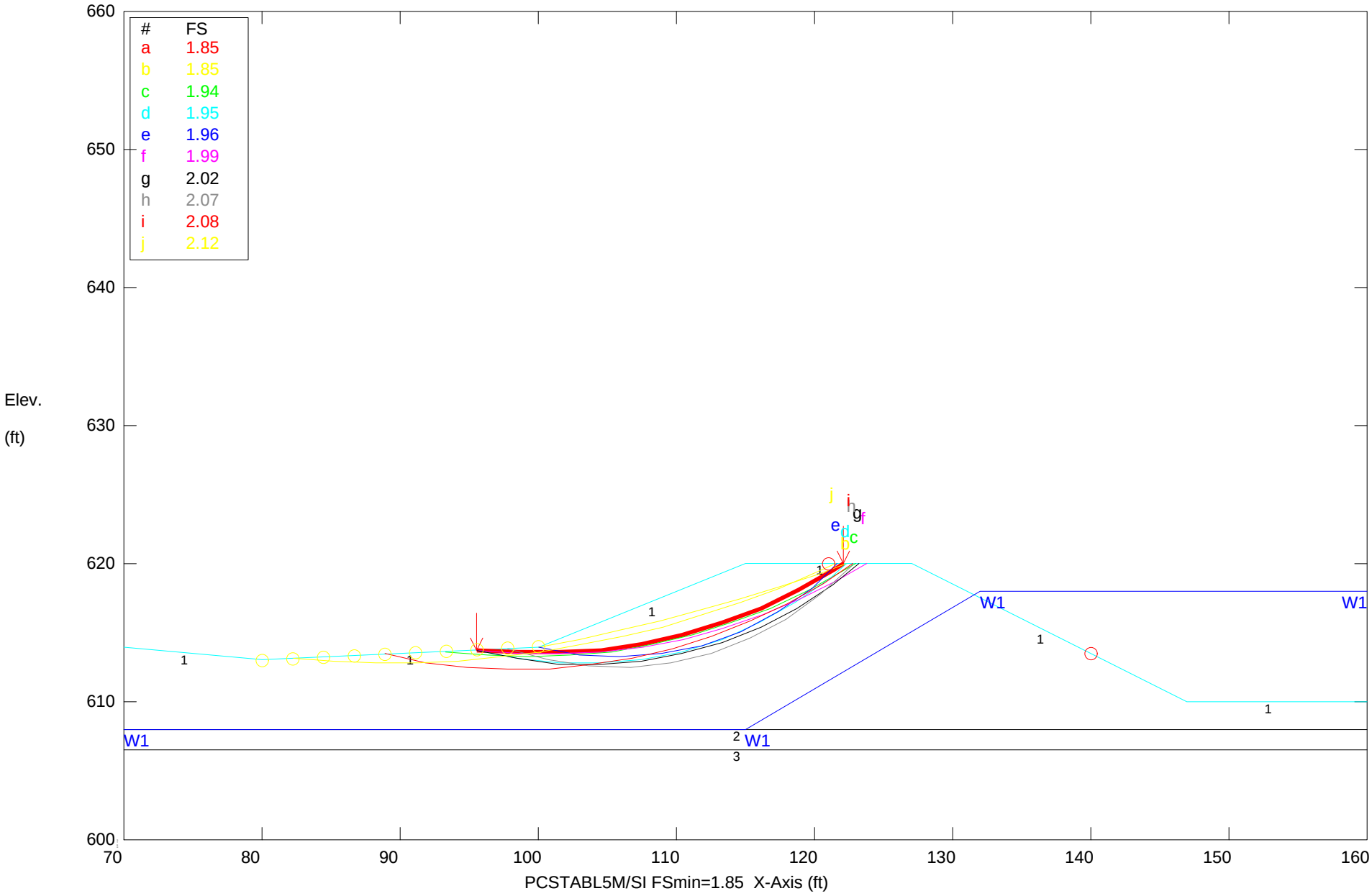
Attachment D

WPDES Pond Slope Stability Analyses Results
Ten Most Critical Surfaces Per Analysis
Nelson Dewey Generating Station

Source:
Program pcSTABL5m/SI output by Aether dbs, June 2012

Alliant Cassville WPDES Basin Dike - Static Case with GWT at 608'

Ten Most Critical. C:CASS03S.PLT By: TCW 06-12-12 9:11am

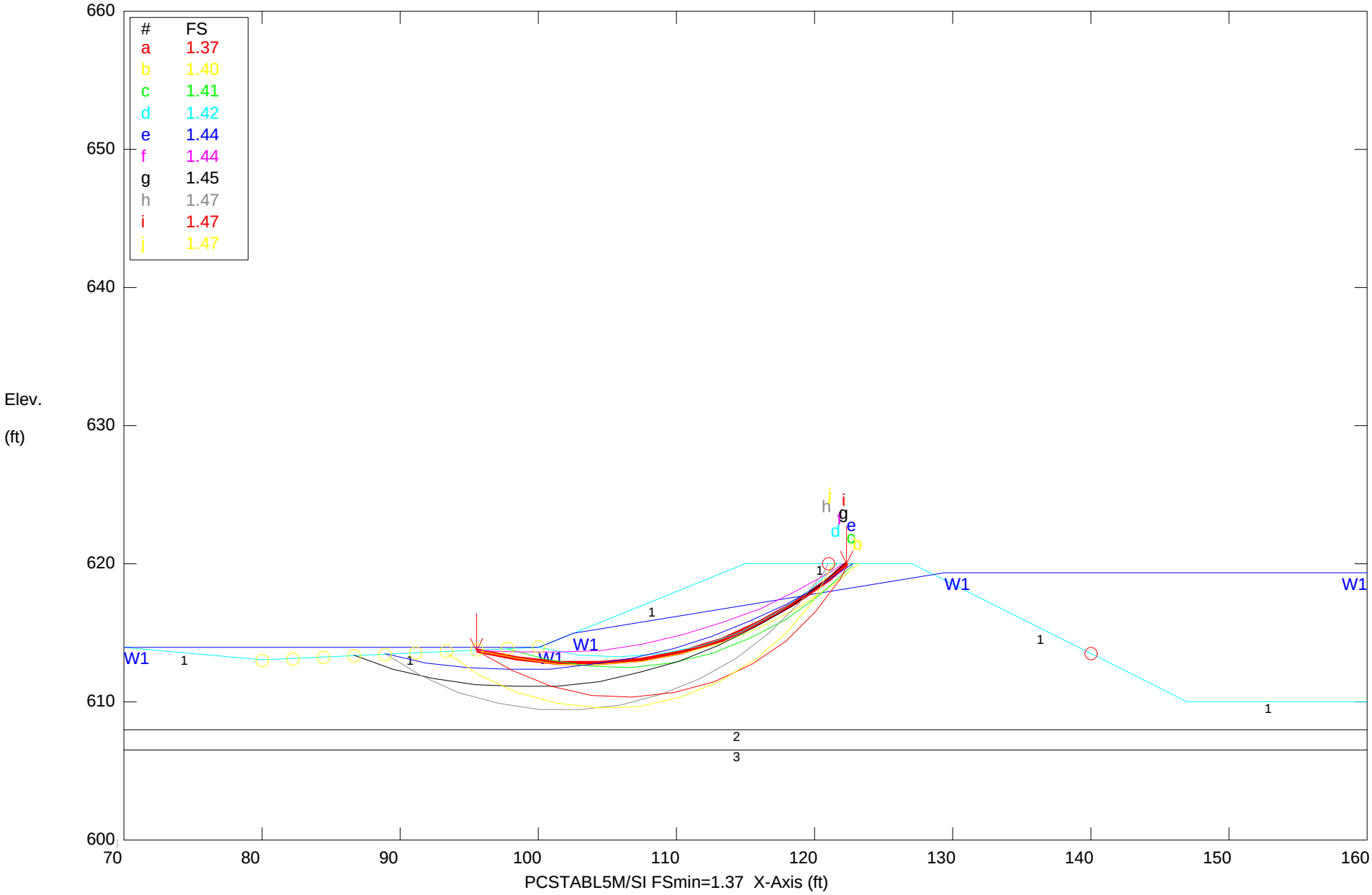


Soil Type No.	Label	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	SILT	120	120	0	27	0	0	W1
2	CLAY	120	120	1500	0	0	0	W1
3	SAND	125	125	0	28	0	0	W1

Alliant Cassville WPDES Basin Dike - Static Case with high water

CONFIDENTIAL BUSINESS INFORMATION

Ten Most Critical. C:CASS02S.PLT By: TCW 06-12-12 9:39am

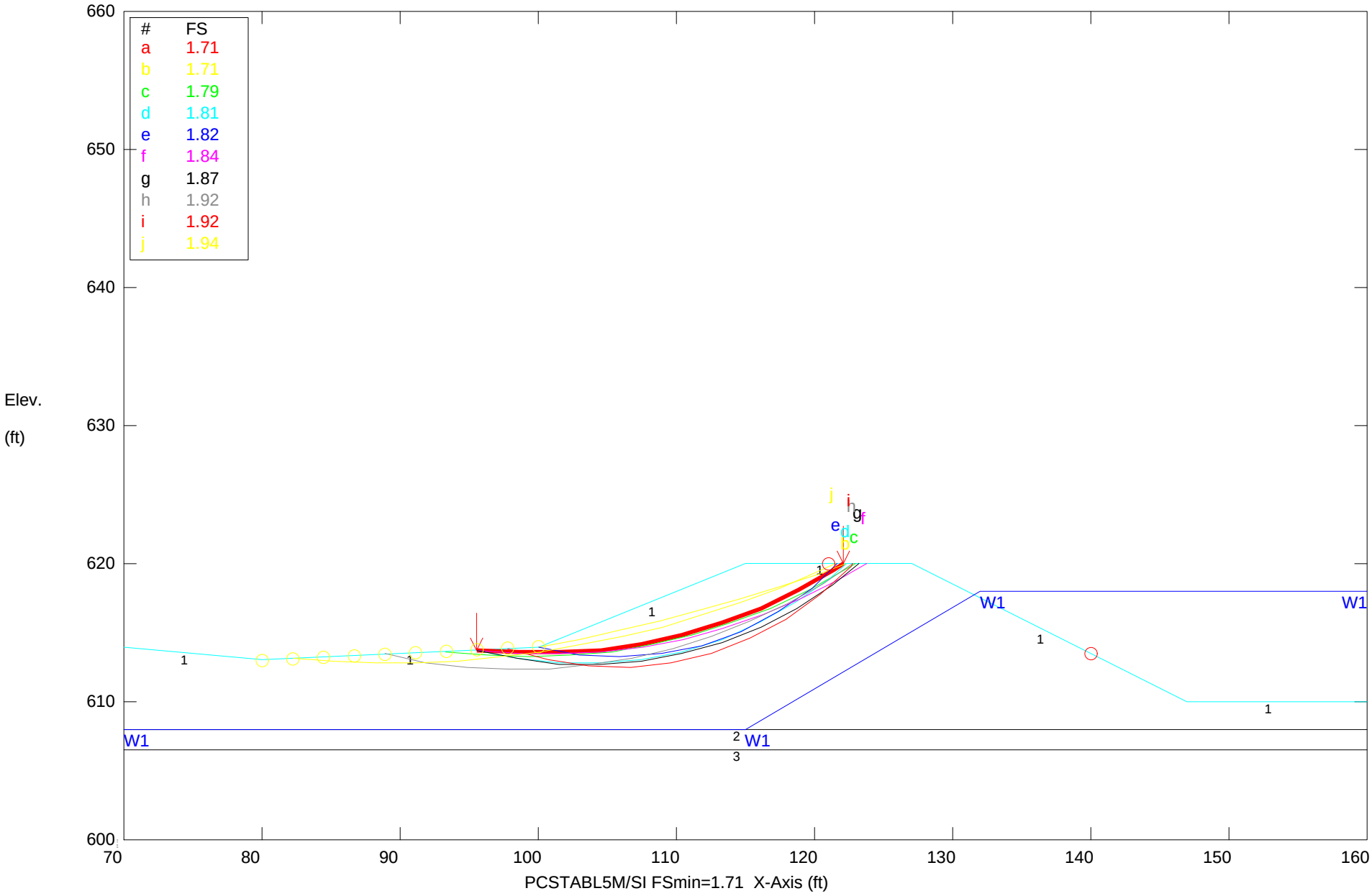


PCSTABL5M/SI FSmin=1.37 X-Axis (ft)

Soil Type No.	Label	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	SILT	120	120	0	27	0	0	W1
2	CLAY	120	120	1500	0	0	0	W1
3	SAND	125	125	0	28	0	0	W1

Alliant Cassville WPDES Basin Dike - EQ Case with GWT at 608'

Ten Most Critical. C:CASS03E.PLT By: TCW 06-12-12 9:13am



PCSTABL5M/SI FSmin=1.71 X-Axis (ft)

Soil Type No.	Label	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	SILT	120	120	0	27	0	0	W1
2	CLAY	120	120	1500	0	0	0	W1
3	SAND	125	125	0	28	0	0	W1

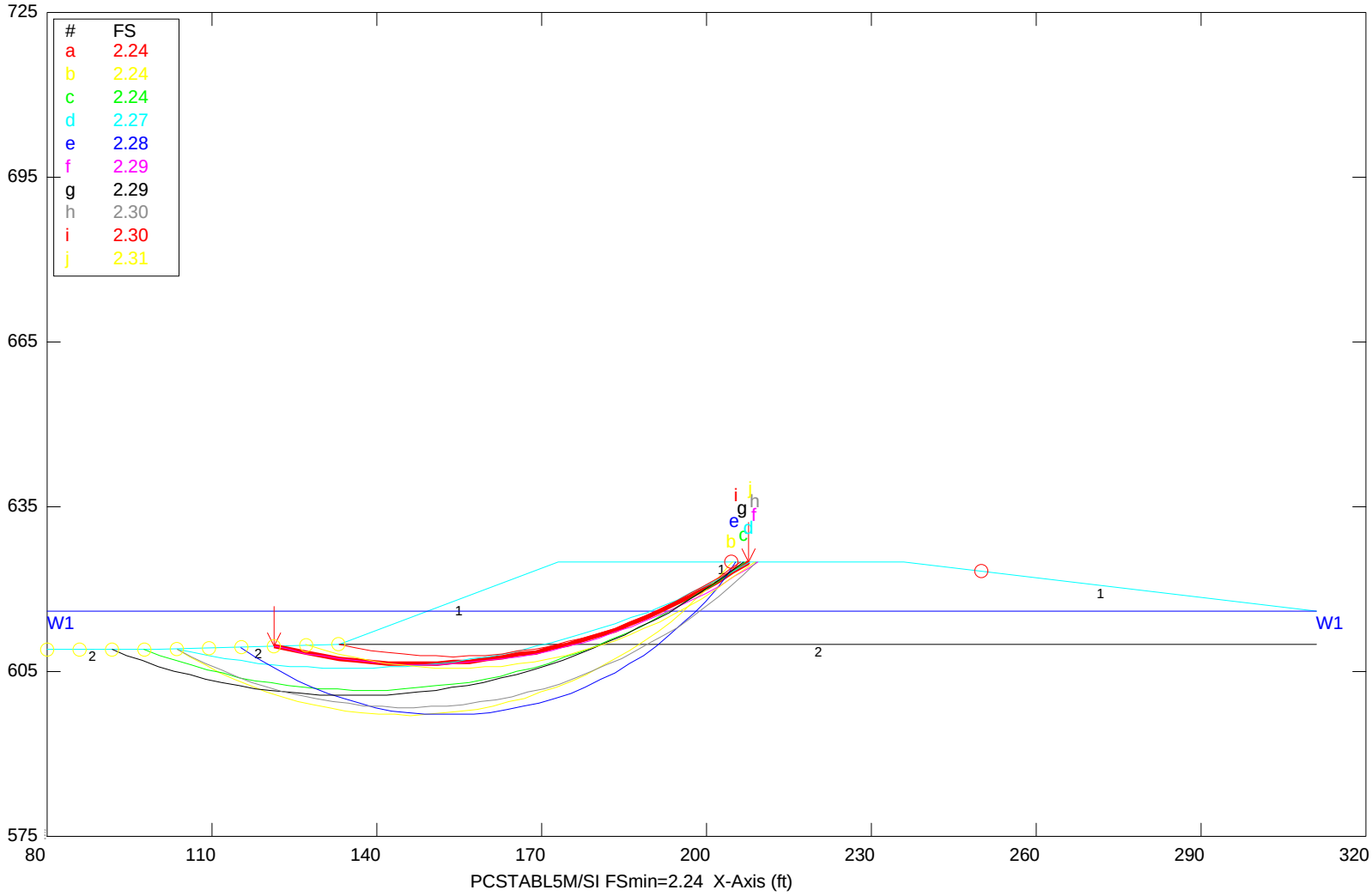
Attachment E

Slag Pond Slope Stability Analyses Results
Ten Most Critical Surfaces Per Analysis
Nelson Dewey Generating Station

Source:
Program pcSTABL5m/SI output by Aether dbs, June 2012

Alliant Cassville Slag Pond - Static Case with water at 616' (normal)

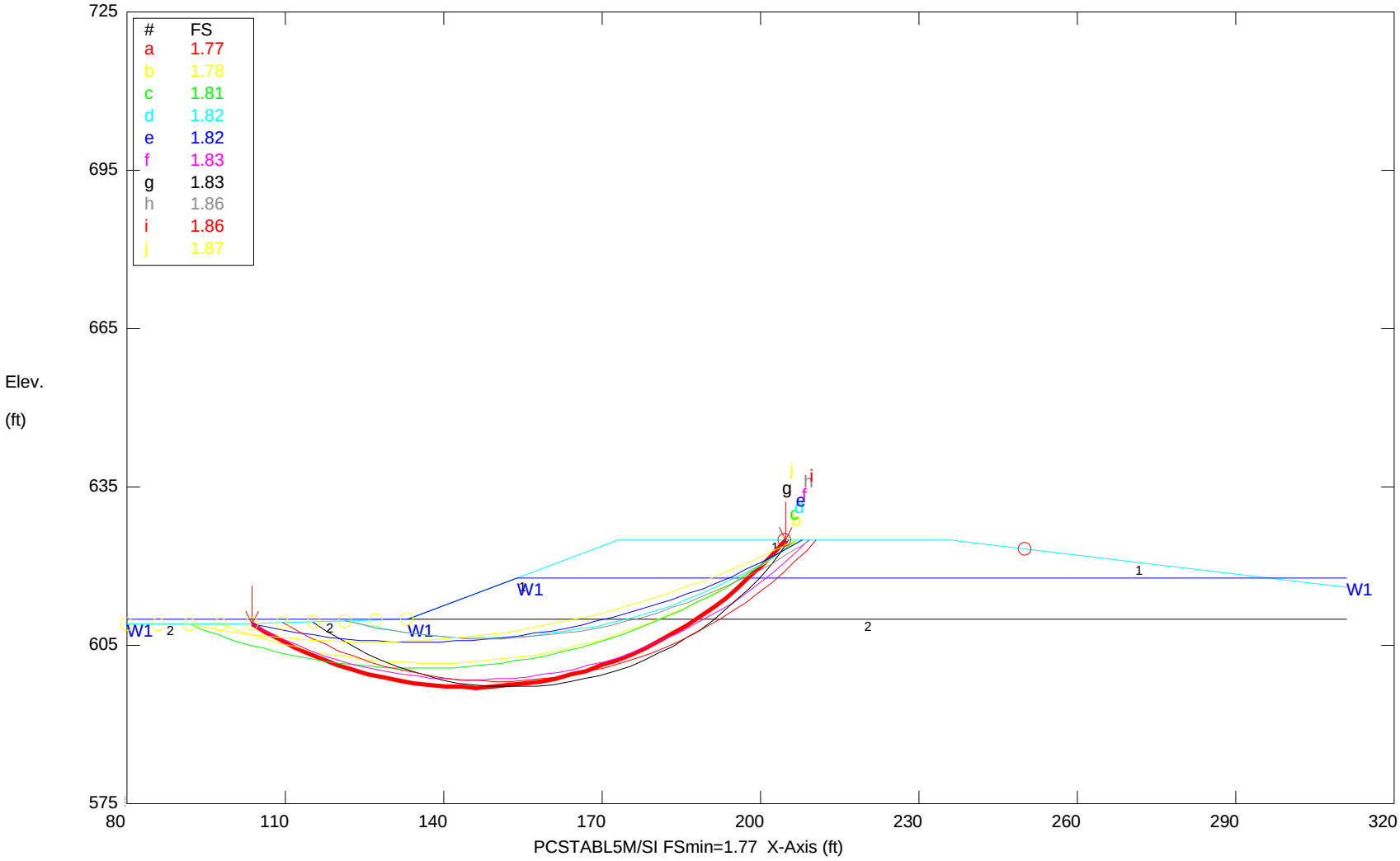
Ten Most Critical. C:CASS12S.PLT By: TCW 06-14-12 9:24am



Soil Type No.	Label	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	SLAG	125	125	0	28	0	0	W1
2	SAND	120	120	0	28	0	0	W1

Alliant Cassville Slag Pond - Rapid Drawdown with high water (617.8')

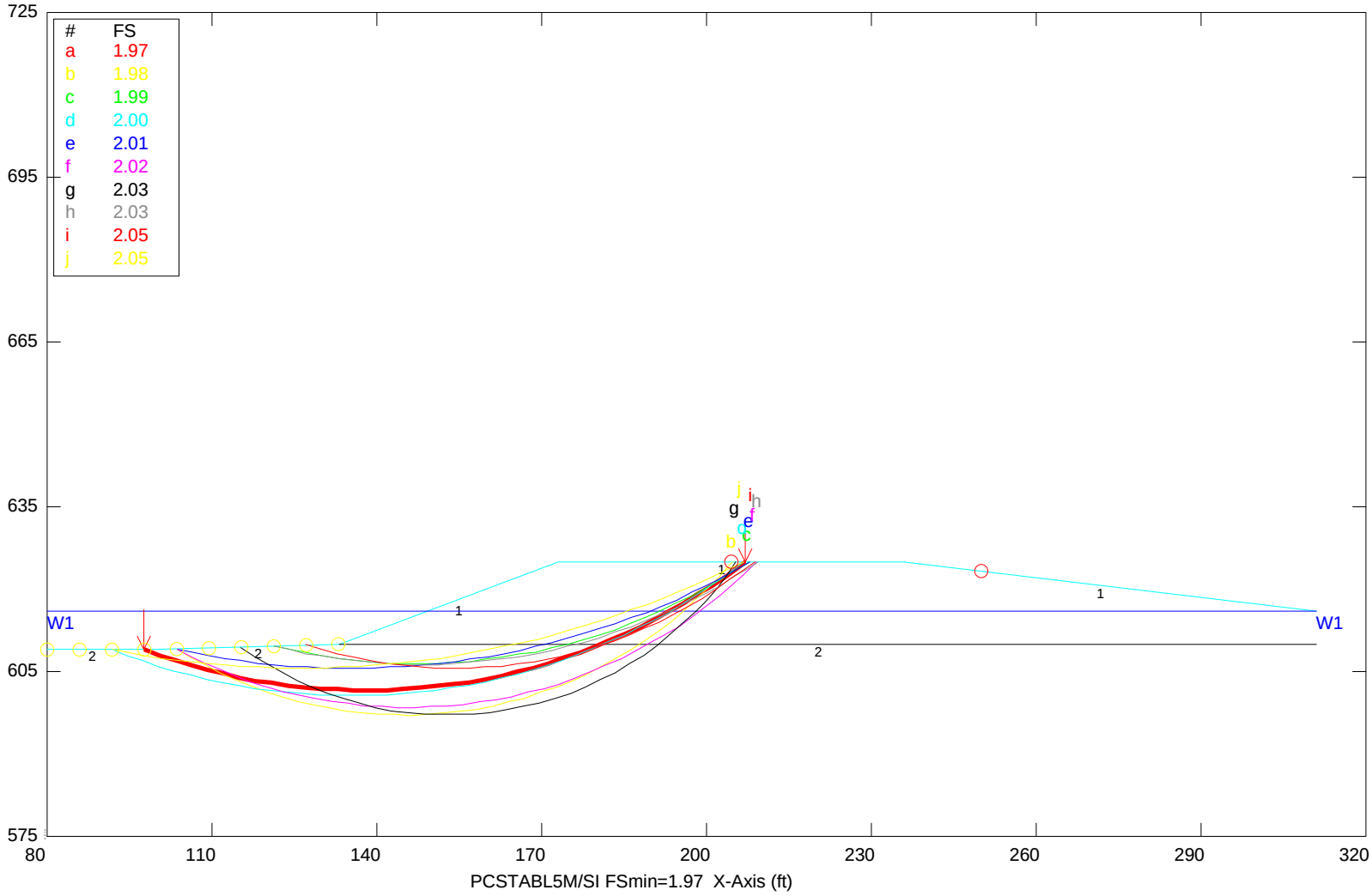
Ten Most Critical. C:CASS12R.PLT By: TCW 06-14-12 9:35am



Soil Type No.	Label	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	SLAG	125	125	0	28	0	0	W1
2	SAND	120	120	0	28	0	0	W1

Alliant Cassville Slag Pond - EQ Case with water at 616' (normal)

Ten Most Critical. C:CASS12E.PLT By: TCW 06-14-12 9:21am



Soil Type No.	Label	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	SLAG	125	125	0	28	0	0	W1
2	SAND	120	120	0	28	0	0	W1

Attachment F

Curriculum Vita
Mr. Timothy J. Harrington, P.E.
Mr. Thomas C. Wells, P.E.

Aether DBS

TIMOTHY HARRINGTON, P.E.

Principal

PROFESSIONAL ENGINEERING LICENSES

New Jersey, 1985 (GE 30238); Delaware, 1987 (7145); New York, 1986 (62728-1); Pennsylvania, 1979 (28505-E); Michigan, 1980 (27309); Indiana, 1981 (19646); Illinois, 1984 (062-041983); California, 1983 (35743); Georgia, 1984 (14874); Florida, 1982 (31484); Wisconsin 2003 (36243)

QUALIFICATIONS

Mr. Harrington has 37 years in the application of engineering solutions to the management and completion of projects involving many geotechnical, and environmental remediation components, specializing in soil and sediment remediation. He has:

- Managed Large Remediation Projects from design through construction
- Managed complex Superfund projects with intertwined design, regulatory and construction issues
- Negotiated for single and multiple PRP groups to receive agency approval of remedial actions
- Negotiate for single and multiple PRP groups to drive completion of construction remediation
- Developed innovative solutions that satisfy agency objectives and reach owner goals for the project
- Recognized as an expert on contaminate sediment and soil remediation in several USEPA regions
- Consulted on the recovery of fly ash from the Emory River in Kingston, Tennessee

Geotechnical Engineering Experience:
Mr. Harrington has consulted on the design and construction of systems to control slope stability and liquefaction of loose soils.

- Consultant on the means and methods of recovering 2.5 million cubic yards of fly ash from the Emory River near Kingston Tennessee.
- Personal observation of the fly ash impoundment failure at Kingston shortly after the failure and before the start of remedial action.
- Stability analysis and design for facilities in dune sand around Lake Michigan to maintain excavations.
- Stability analysis of Uranium Tailings ponds constructed by hydraulic placemnt methods in New Mexico.
- Design of systems to stabilize Uranium Tailings ponds by controlling seepage on the embankment face.
- Design of methods to remediate loose soil to control liquefaction by compaction and/or drainage methods.

- Liquefaction testing of soils by both laboratory and field methods.

EXPERIENCE

Principal and Senior Environmental Engineer, aether DBS., Naperville , IL

Mr. Harrington's firm was acquired in January of 2006 by Hard Hat Services (now aether DBS). Both firms coming together increased respectively each others' capabilities as well as offered additional services to their clients. Mr. Harrington manages major environmental remediation efforts and solutions as well as being responsible for the Chesterton, Indiana office. His expertise is in soils, sediment and marine environments.

President, Harrington Engineering & Construction, Inc., Chesterton, IN

Mr. Harrington was owner and provider of engineering and construction management services on domestic and international projects. Projects include design and construction management for the rebuilding of intake structures in Lake Michigan, removal and processing of sediment containing lead shot to restore beneficial reuse of a critical ocean shore environment, design of an upland landfill to contain sediment from the Fox River in Green Bay, Wisconsin, design of an in-water landfill in Auckland, New Zealand to contain low solids content sediment, and services on numerous facilities to construct or repair dock walls and marinas, resolve drainage problems and repair unstable slopes.

Canonie Environmental Services Corporation, Chesterton, IN

As vice president of the construction services division, Mr. Harrington was responsible for the direction of operations in the eastern USA. Projects included the construction of an upland disposal facility at the 102nd street site in Tonowanda, New York and the excavation of sediment from the St. Lawrence River, soil thermal treatment on high plasticity clay in Memphis, Tennessee, and site restoration including the removal of lime sludge and riverbank restoration in western Pennsylvania.

Rust Remedial Services Inc., Chicago, IL

Mr. Harrington served as Vice President and General Manager responsible for the operations of the Northern Region and the Thermal Operations groups. He managed work under contract totaling approximately $400,000,000 and including numerous jobs where sediment remediation was a part of the total remedy including the Brio site in Houston, Texas, the construction of landfills in New York and Massachusetts, and removal of solidified sludge from two 20-acre basins in Southern New Jersey.

Canonie Environmental Services Corporation, Chesterton, IN

Mr. Harrington served as vice president of eastern operations responsible for design and construction projects, project manager, and project engineer for design and construction field engineering. Work included the design and construction of in-water and upland landfill's at Waukegan Harbor, Illinois, design and construction of a cap and slope protection for remnant sediments in the Hudson River, work on landfills caps in New Jersey and Indiana, and numerous projects working as a geotechnical engineering consultant on failure investigations.

D'Appolonia Consulting Engineers, Inc., Pittsburgh, PA
Mr. Harrington worked as a project engineer on projects to build power plants, on the investigation and design of mine tailing impoundments for uranium tailings in New Mexico, on design of underground mine works for the waste isolation pilot plant in New Mexico, and on several projects for water supply and dewatering of aquifer formations.

EDUCATION

Michigan State University – Masters of Science in Civil Engineering (Geotechnical and Structural Engineering Specialty)
Michigan State University – Bachelor of Science in Civil Engineering

CERTIFICATIONS

- 40-Hour OSHA HAZWOPER Training
- 8-Hour Refresher for 40-Hour Hazardous Training
- Certificates for Continuing Education from ACI, AISI, SJI and others for Renewal of Professional Licensing

PROFESSIONAL ACTIVITIES

American Society of Civil Engineers
American Concrete Institute

THOMAS CHARLES WELLS, P.E.

Senior Project Engineer

PROFESSIONAL ENGINEERING LICENSE

Michigan, 1991 (6201036924)

QUALIFICATIONS

Mr. Wells has over 35 years of geoenvironmental engineering and database management / programming experience. As a senior engineer for Aether DBS, Mr. Wells has supplied both office and field based engineering and information technology support services.

As a Professional Engineer, Mr. Wells has considerable experience in the key areas of geotechnical, environmental, hydrology, hydraulic, and foundation engineering. He has continued to practice in these areas as a part of his engineering/database focus.

Geotechnical Engineering Experience:
Mr. Wells has contributed to many heavy construction projects involving industrial facilities and environmental remediation. Geotechnical engineering related projects / tasks have included:

- Performed stability analyses for 8 miles of I-74 in Dearborn County, Indiana following a major interstate highway embankment failure. The stability investigation led to the design of a corrective berm on a similar nearby side-hill highway embankment.
- Performed stability analyses for a riparian fill design following the foundation soil failure of approximately 800 feet of ore yard at Sparrows Point, Maryland.
- Analyzed the extreme settlement (3-4 feet) of Chemical Storage Tanks in Paulsboro, New Jersey.
- Investigated and analyzed a slope stability failure along the St. Joseph River in Michigan.
- Analyzed a slope stability failure along the Grand Calumet River in Gary, Indiana and designed a corrective slope.
- Development and improvement of a 1-D finite-difference numerical model to simulate large-strain soil/sediment consolidation for use in predicting the large settlements that occur in hydraulically placed sediment.

EXPERIENCE

WELLS Technical Services, Chesterton / Union Mills, IN
As a sole Proprietor serving primarily Aether DBS (formerly Harrington Engineering & Construction), Envirocon, Inc. and Locus Technologies, Mr. Wells supplies engineering and information technology support services on a project-by-project basis. Aether DBS specializes in Sediment Restoration Services, Marine Design, Environmental Engineering, and Site Remediation. Envirocon is a full-service environmental remediation, demolition and civil construction contractor. Locus Technologies is an engineering and construction management firm based in northern California and serving primarily the environmental market. Locus Technologies is the leader in on-demand world-wide-web based Environmental Data Management Software, Services and Solutions.

Harding Lawson Associates, Chicago, IL
As an associate engineer in the Chicago office, Mr. Wells contributed to multiple projects and systems including HLADBMS (the Harding Lawson Associates DataBase Management System). HLADBMS was used to manage site characterization data generated by environmental projects. Mr. Wells also served as the North Carolina Low Level Radioactive Waste Facility feasibility project database administrator in Raleigh, NC during the project start-up phase November 1996 through March 1997.

Canonie Environmental Services Corporation
Mr. Wells served as a Technical Manager / Staff Consultant where he provided engineering and information technology support to both the technical and administrative staffs. Mr. Wells also acted as the drafting supervisor and network administrator at times (while performing his other roles). Geotechnical and Environmental project work included ground water & hydraulic modeling, geotechnical analysis & foundation design and geoenvironmental data management.

Environmental construction management tasks included the development of a construction equipment cost management system and the development of a companywide environmental construction cost estimating system used to estimate project costs totaling millions of dollars.

D'Appolonia Consulting Engineers, Inc., Pittsburgh, PA
Mr. Wells acted as the Computer department's liaison with the technical staff, supported project usage of the PRIME® super-minicomputers, and Mr. Wells also assisted with ground water modeling projects. During his first project assignment beyond graduate school, Mr. Wells authored a flood-routing program for a probable maximum flood study. During this period as a staff engineer, Mr. Wells performed pile driving, slope stability, and foundation analyses. He designed foundations, waste embankments, earthen dams, drainage channels, and spillways.

EDUCATION

Penn State University – Certificate in Geographic Information Systems
Michigan State University – Masters of Science in Civil Engineering (Geotechnical and Hydraulics / Hydrology Engineering Specialty)
Michigan State University – Bachelor of Science in Civil Engineering

CERTIFICATIONS

- 40-Hour OSHA HAZWOPER Training
- 8-Hour Refresher for 40-Hour Hazardous Training
- Certificates for Continuing Education from ASTM, Purdue University and others

PROFESSIONAL ACTIVITIES

American Society of Civil Engineers